

**BUREAU OF LAND MANAGEMENT  
NEVADA**



**NUVAGANTU:**

**Nevada Indians Comment on the  
Intermountain Power Project**

Richard W. Stoffle

Henry F. Dobyns

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NEVADA

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# **NUVAGANTU: Nevada Indians Comment on the Intermountain Power Project**

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## FOREWARD

"Navagantu: Nevada Indians Comment on the Intermountain Power Project" presents information on a facet of cultural resource management which has been gaining increased attention in recent years. In compliance with the National Environmental Protection Act of 1969 and the American Indian Religious Freedom Act of 1978, the Nevada BLM is attempting to ensure that Native American groups have the opportunity to express their concerns regarding the effects of Federal and Federally-sanctioned actions on resources and areas important to them in terms of their religious belief and traditional values. Considerable contact with Native American groups in Nevada was established during 1980-81 in connection with the proposed deployment of the MX Missile System. However, that project was abruptly terminated at an early stage and no final report resulted. "Navagantu" thus breaks new ground representing the results of the first application to a major project on public lands in Nevada of Federal legislation intended to protect religious practices and traditional interests of the indigenous Native American population. For this reason, "Navagantu" offers an important example in addressing many of the issues involved in assessing project impacts on Native American traditional practices.

Because this effort was essentially the first of its kind in southern Nevada, the investigators were instructed to comprehensively review the published literature and archival sources, primarily anthropological and historical, concerning Native American traditional culture and history in the region. By reviewing and synthesizing available information, Chapter IV provides a comprehensive background from which investigators on future projects in southern Nevada may draw. This chapter is in no sense a mere reiteration of previous interpretations. On the contrary it offers new interpretations and emphases concerning the socio-political organization of the Southern Paiute prior to white contact, their use and manipulation of the native plant environment, and the devastating effects of white contact on aboriginal population size.

Contemporary expressed concerns of Native American groups regarding construction of the Intermountain Power Project transmission lines are presented in Chapter V, and methods for obtaining the comments described in Chapter III. These comments were considered in combination with similar comments gathered earlier on other development projects in nearby southeastern California. Since completion of the report, portions of the proposed route have been altered. Southern Paiute groups were contacted once again and an addendum report written. However, this circumstance does not detract from the value of the earlier work published in this volume.

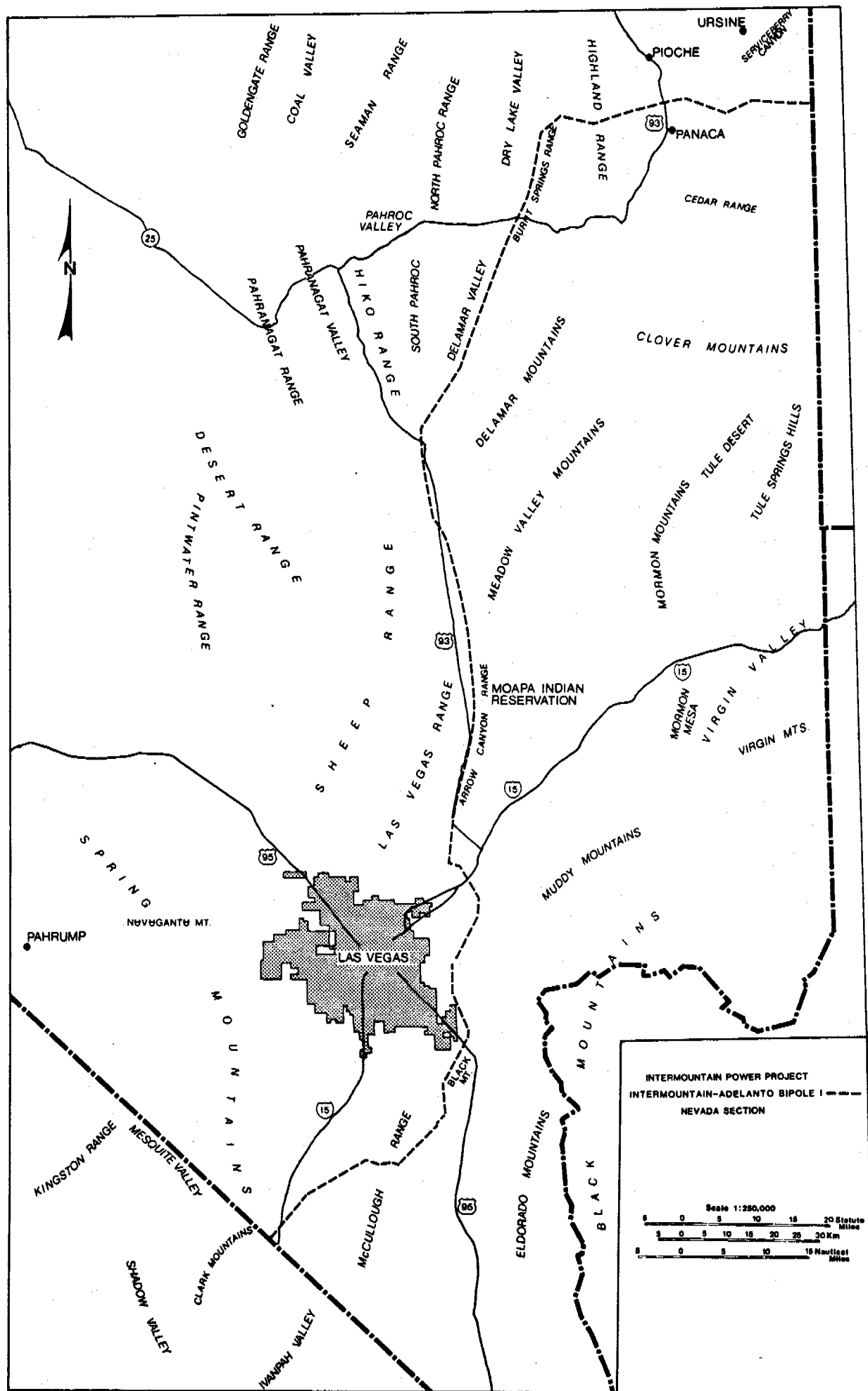
"Navagantu" is similar to the previous volumes in this series in that it includes an overview of published and unpublished data. However, instead of being primarily archaeological or historical in character, its principal focus is the ethnohistory of the Southern Paiute. Treatment of this subject has naturally included a discussion of major historical events in the settlement of southern Nevada, much of which is now public land administered by the Bureau's Las Vegas District.

Thanks are due to Applied Conservation Technology, Inc., Fullerton, California, the prime contractor for environmental studies on this project, for their cooperation in the development and publication of this report.

Richard C. Hanes  
Nevada State Office  
Bureau of Land Management  
Reno

September, 1983





NEVAGANTH:  
NEVADA INDIANS COMMENT ON  
THE INTERMOUNTAIN POWER PROJECT

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July 19, 1982

NAVAGANTU

"it has snow," the Paiute name for Charleston Peak, the place where nungwa - the people - were created

A PAIUTE RELIGIOUS LEADER AND ELDER COMMENTS ON IPP PROPOSAL

In our Indian way I could say it...nungwewwipaxaip mara.  
Axani, axani, axani, nungwuxapi ura'navacha  
uama kiyakapi ura'paxaivyach, the sacred places you know.  
Axan uru'as aik, mara'ra nungwewwipur ava ur mara'ra.  
Mara sawaxantapa urampur kunur avikuvani aik.  
Ich ma nungwewwipur sawavaxianar.  
Arukwaiaip nungwewwip aik.  
Mava nungwunchingwung kanixaipaxantam.  
Ich manoni ich apa nungwewwip.  
Ura upa nungwunchingwa unipenger.  
Nungwaxup ura'navach uras...

(translation by line)

In our Indian way I could say it...that former Paiute country.  
How, how, how, there must be Paiute graves there use to be  
places where they round-danced the sacred places you know.  
There, I said, how it is, that is Paiute land there.  
I think the electricity will lie on sacred things.  
This Paiute country is sacred.  
So is that part of the Paiute country that was under the ground.  
The Paiutes used to have camps there.  
All that is Paiute Country  
Paiutes used to live out their lives there.  
There must be Indian graves...

## ACKNOWLEDGEMENTS

A project of this scope is the product of dozens of hands and hundreds of minds. Special thanks go to the many Indian people who accepted the challenge of reaching across time and miles to help protect Native American cultural resources potentially impacted by the IPP power transmission line. The names of these people will not be mentioned in order to protect their privacy.

The project was immeasurably facilitated because of the able assistance of the Official Tribal Contact Representatives, the OTCRs. While this was a new experience for each of them, they attended training sessions, arranged for public meetings on their reservations, communicated with tribal chairmen when appropriate, helped arrange for in depth interviews, and have reviewed this manuscript for their councils. In alphabetical order, the OTCRs are:

Richard Arnold, MA	Pahrump Paiute Tribe
Geneal Anderson	Indian Peaks Band of the Paiute Indian Tribe of Utah
Cynthia Keoke	Confederated Tribes of the Goshute Reservation
Philbert Swain	Moapa Indian Reservation
Gloria Yazzie, BA	Las Vegas Paiute Tribe

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## CHAPTER I. MANAGEMENT SUMMARY

This is the report of a Native American cultural heritage resource study conducted by the University of Wisconsin-Parkside Applied Urban Field School (UW-P:AUFS) for Applied Conservation Technology, Inc. (ACT). It deals with the Nevada section of the Intermountain Power Project (IPP) a development being proposed by the Intermountain Power Agency (IPA). The latter is a consortium of 23 Utah municipalities. It has authorization to build and operate a coal-fired, 3,000 megawatt steam electric generating facility near Delta, Utah.

### THE INTERMOUNTAIN POWER PROJECT

Implementation of the Intermountain Power Project has begun. The IPP generating plant is currently under construction. IPA plans commercial operation of the four planned 750-MW generating units to start in July of 1986, 1987, 1988 and 1989. The IPA expects to burn coal mined from both existing and to-be-opened shaft mines in central Utah. It plans to utilize water from the Sevier River and local wells. IPA anticipates installing two distinct transmission systems to convey electricity from the generating station to the distribution networks of participants in this project--the Utah System and the Southern California System.

### THE SOUTHERN CALIFORNIA SYSTEM

This component is planned as two 500-KV Direct Current (DC) transmission lines crossing portions of southwestern Utah, southern Nevada and southern California. Plans call for building an 836 km. (519-mile) northern transmission line termed Intermountain-Adelanto Bipole I line to carry electricity from generating Units 1 and 2. A second 796-km. (496-mile) southern transmission line, Intermountain-Adelanto Bipole II is planned for later construction and will transmit power generated by Units 3 and 4. Present plans schedule construction of Bipole I to begin in July of 1983, and Bipole II two years later. Each transmission line will include a converter station at the generating plant to convert alternating current to DC, and a reconversion station at Adelanto, California, to change DC to AC. Existing distribution facilities will deliver electricity from the Adelanto Station to project participants in Southern California: the municipalities of Anaheim, Burbank, Glendale, Los Angeles, Pasadena, and Riverside. The City of Los Angeles' Department of Water and Power (LADWP) is responsible for

designing, constructing, operating and maintaining the Southern California transmission system.

The present study deals with Native American cultural resources within the Nevada section of the corridor for the northern line in the Southern California System--the Intermountain-Adelanto Bipole I line. Under terms and conditions of the Federal Land Policy and Management Act of 1976 (Titles II and V), IPP received from the U. S. Bureau of Land Management (BLM) as the lead federal agency, a transfer of ownership for the generating station site, and a grant of rights-of-way for the Southern California system's two 500+ kV transmission lines. Each 500+ kV line right-of-way is limited to a 61 m. (200-foot) width, measured as 30 m. (100 feet) on either side of a centerline. This grant is general, lacking any site-specific stipulations. Those will be incorporated into the grant in the form of an operating plan when a Notice to Proceed is issued to authorize construction to begin.

#### ETHNOGRAPHIC-ETHNOHISTORICAL ANALYSIS OF NATIVE AMERICAN VALUES

The present study identifies Native American peoples across whose aboriginal territory the proposed IPP Intermountain-Adelanto Bipole I transmission line right-of-way would be constructed. It also identifies other Native American groups that have lived in and utilized portions of the proposed right-of-way across southern Nevada within historic times. This study analyzes what value members of Native American groups historically present in southern Nevada place upon cultural resources that may be adversely affected by construction of the proposed transmission line and associated structures. It does so by describing specific concerns expressed by contemporary Native Americans, and by presenting an ethnohistorical analysis of how intergroup relations and forced Native American demographic and cultural changes have contributed to shaping contemporary values, perceptions and attitudes. The present study also conveys Native American recommendations for mitigating adverse impacts of the proposed construction upon their cultural heritage.

The findings of the study reported here are intended to assist the IPA in complying with requirements of federal regulatory agencies in carrying out the IPP. In conducting the study, the authors and their associates relied insofar as possible upon results of earlier research dealing with the study area. As the study progressed, comparison of eye-witness accounts of Native American behavior to published descriptions of an "ethnographic present" reconstruction from interviews revealed serious conceptual deficiencies in many of the latter. Consequently, the present report describes Native American traditional and historical behavior rather differently than previously published "ethnographic present" reports.

Considerable eyewitness description of historic Native American behavioral patterns is incorporated in the present report as evidence for the validity of the conclusions it presents.

The contemporary Native American inhabitants of southern Nevada belong for the most part to the tribe that occupied it when Euroamerican travel and colonization began in the nineteenth century. That Southern Paiute Holy Land includes the site of their ethnic creation (~~Navagant~~) according to their traditional oral Scripture, and numerous sites or zones especially sacred (c. f. frontispiece statement; Spicer 1957; Dobyns 1960). They are conscious, to a degree varying with individuals, that traditional belief defined the entire study area as essentially sacred and as part of the specific region that their ancestors received from supernatural beings. This characteristic mental set of a "persistent people" (Spicer 1971) makes legal mandates with regard to Native American cultural heritage pertinent to the question of possible adverse IPP impacts upon that heritage.

Legal mandates currently require that Native Americans participate in preparing environmental assessments and call for Native American identification of those resources held sacred in order to insure that their legitimate cultural heritage concerns are included in these documents. The American Indian Religious Freedom Act of 1978 guarantees to native Americans the same constitutional protection enjoyed by other United States citizens. The effect of the act is to prohibit federal agencies from issuing permits for projects that will interfere with Native American freedom of religious practice.

#### TRADITIONAL TERRITORY

The study area analyzed in the present report consists of a right-of-way 200 feet wide (60 m.) extending 213 miles from the Utah-Nevada border to the Nevada-California boundary. The entire area lies within aboriginal Paranayi Southern Paiute territory.

#### RESEARCH FINDINGS

##### SACRED AND RELIGIOUS VALUES

Native American concerns over potential adverse impacts on Southern Paiute sacred lands, and particularly holy shrines and zones, are presented in detail in Chapter V. The world-view that frames such concerns bears emphasis. Like other Native



Americans, contemporary Southern Paiutes continue to perceive their habitat holistically. That is, they generally differentiate secular from sacred only to the extent that their thought processes have been shaped by formal education in the English language, and Euroamerican concepts. Research for this report disclosed that contemporary Paiute (Numic) includes a term that translates into English as Sacred Land. This term is regarded as itself so powerful that it is not employed during everyday discourse so we do not transliterate it here. Traditional Southern Paiute culture did not and does not distinguish a secular dimension. That traditional cultural perception of sacredness is reinforced by frequent Southern Paiute funeral and mourning ceremonies. A persistently high mortality rate insures that funeral and mourning rituals occur frequently, and Southern Paiutes assemble at them in relatively large numbers. Ceremonial leaders sing and chant oral Scriptures during these rites which describe the integral relationship between the Southern Paiute people, their traditional supernatural beings, and their Holy Land. Thus, sacred ties between living Southern Paiutes in southern Nevada and that portion of their ancestral Holy Land are very effectively reinforced.

The proposed IPP right-of-way potentially threatens Southern Paiute sensitivity over sacred territory at a few specific locations. These are discussed in some detail in Chapter V. Here a listing is sufficient: (1) the mountainous sector of the proposed right-of-way near the Utah-Nevada state boundary, particularly in and near Eagle Valley, (2) the stretch of proposed right-of-way parallel to Arrow Canyon Mountains, particularly near the northern tip of that range and the long-traveled trail through Arrow Canyon itself with a very sensitive meeting ground on the bajada slope (see PLATES 1 and 2), (3) proximity to caves where prospective religious practitioners sought access to supernatural power in the Sunrise and Frenchman Mountains east of the city of Las Vegas, (4) proximity to the Black Hills southeast of Las Vegas and Henderson, and (5) particularly shrines and stone cairns and sacred trails in an unnamed pass through the McCullough Mountains.

#### TRADITIONAL USE VALUES

Southern Paiutes consulted during the present study expressed a relatively high level of concern for traditional use areas within the study area. They express concern over adverse construction impacts on hunted animals, most especially the highly-valued desert tortoise. They express concern over adverse construction impacts on numerous food and medicinal plants, the large barrel cactus (Echinocactus spp.) among them.

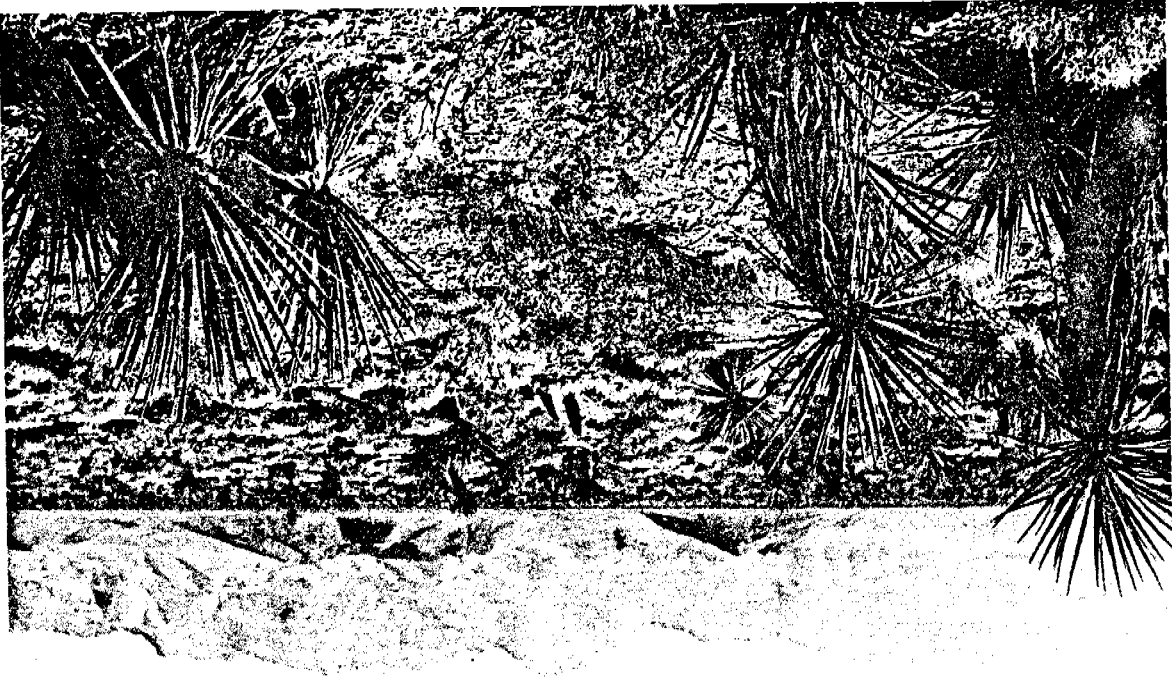
Moreover, Southern Paiutes are specifically concerned about potential adverse construction impacts on specific spots, often kept secret. For example, Las Vegas Wash, which is crossed by the proposed right-of-way may be cited as an example because the special concern has been published. The body of the man who functioned as one of the two chiefs of the Las Vegas labor gang/band between 1895 and 1908 is buried in the Wash (Mike 1974:19).

#### SPECIFIC SITES AND AREAS

A detailed discussion of sites and zones specifically sensitive to Southern Paiutes is presented in the Confidential Appendix, including photographs. That discussion distinguishes between what Euroamericans view as religious concerns from what they perceive as traditional use sensitivity, although that distinction does not exist in traditional Native American thought-ways. One important characteristic of the proposed IPP right-of-way across southern Nevada bears mention. Some sections of the proposed right-of-way parallel existing highways and electric power transmission lines, so that they may be regarded as merely adding an additional degree of desecration to already compromised portion of Southern Paiute Holy Land. Other sections of the proposed right-of-way would cross previously unviolated zones. These latter sections, with the associated construction and maintenance roads, pose a threat to significant artifactual evidence of former Southern Paiute land use, to particularly important sacred sites and zones, and to still utilized game and food and medicinal plant resources.

Southern Paiute Cultural Change. The Southern Paiute people have persisted biologically partly because they have been flexible culturally. They have preserved their Numic language, and considerable knowledge of traditional Southern Paiute culture. Yet, during historic times, these persistent people have acquired many of the conventional understandings of Western Civilization. The major configurations of Southern Paiute cultural change discussed in detail in Chapter IV are summarized for the busy reader in Table 1. These changes, along with traditional knowledge, shape contemporary Southern Paiute perceptions of the IPP and its proposed right-of-way across the Southern Paiute Holy Land.

P-2. Looking from IPP proposed right-of-way in Arrow Canyon Valley toward Sheep Mountains, with yucca plants in foreground



P-1. Arrow Canyon Valley looking south along proposed IPP right-of-way with Arrow Canyon Mountain to left

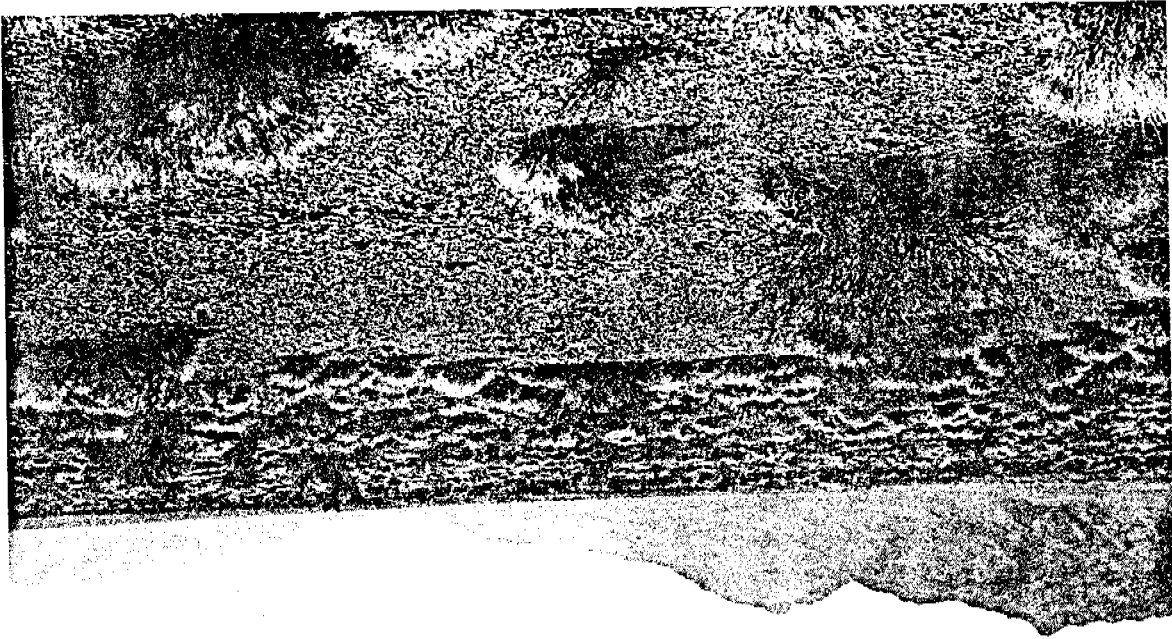


TABLE 1. A BRIEF CHRONOLOGY OF SOUTHERN PAIUTE ETHNOHISTORY  
PERTINENT TO NATIVE AMERICAN CULTURAL HERITAGE IN SOUTHERN  
NEVADA

---

1520-1750+. The Columbian Exchange affects Southern Paiutes.  
Old World contagious diseases spread from the Spanish  
colonial frontier to Southern Paiutes via Native American  
traders. Scale of depopulation is unknown.

---

1750+ to 1855+. Spanish-Mexican demand for Native American  
slaves and servants stimulates Ute mounted slave raids on  
Southern Paiutes. Raids and epidemic diseases heighten  
Southern Paiute fear of Ute sorcery. Raiding for children  
compounds selective mortality during contagious disease  
epidemics, accelerating depopulation.

---

1826-1846. Trappers and traders traverse Southern Paiute  
country, upset economic exploitation of riverine and  
crucial spring oases. Native American intergroup trade  
continues, transmitting some Old World contagious diseases  
to Southern Paiutes. Slave raiding by New Mexicans and  
Utes peaks.

---

1847-1853. Early colonization by members of Church of Jesus  
Christ of Latter Day Saints (LDS) directly transmits  
numerous Old World diseases to Southern Paiutes and their  
neighbors, causing over 75 percent loss in Native American  
population. Depopulation results in a major cultural,  
social, and economic discontinuity among Southern  
Paiutes. Depopulation impact magnified by customary  
mourning abandonment of homes and fields of the deceased.  
Colonists occupy environmentally key irrigable lands and  
domestic waters.

---

1853-1862. Euroamerican and European colonists contaminate  
core Virgin River headwaters with water-borne diseases.  
High Southern Paiute mortality continues, especially  
during 1856 epidemic when people die too fast for bodies  
to be buried. Southern Paiute survivors quickly develop  
wage labor adjustment to Euroamerican domination and  
occupation of irrigated fields and spring oases. Randomly  
decimated kin groups amalgamate.

---

1863-1873. Mountain mining colonization at spring flow oases;  
decimated Southern Paiutes form labor gangs dependent for  
food and survival on employment at mine towns, farms,  
ranches and ferries. Headchief and subtribal chief

offices become dysfunctional as Euroamericans deal with labor gangs at each settlement through a local spokesman "chief." This local intermediary is in effect a labor contractor and cultural broker. About 3 dozen emerge. Adoption of Euroamerican clothing, foods.

---

1874-1902. SOUTHERN PAIUTE DARK AGE.

Euroamerican political power prevents effective implementation of federal land/water reservation policy to benefit Southern Paiutes. A generation matures working in labor gangs with virtually no formal English-language education. Young people are unable to learn traditional culture because of mortality among specialists, elders, or unwilling to learn from knowledgeable traditionalists discredited by dominant ethnic group bureaucrats and particularly denominational missionaries. Northern labor gangs of diminishing Paranayi subtribe, further decimated by Euroamerican genocidal raids, at least temporarily abandon Panaca and Paranagat Valleys, migrate to low-altitude riverine oases.

---

1903-1932. Railroad construction ties southern Nevada to nation, ushers in mechanized transportation era. Highways and automobiles follow. Moapa Reservation, Las Vegas Colony and Pahrump become stable residential bases for Southern Paiutes. Acquiring automobiles, Paiutes become highly mobile wage laborers ranging from Delta, Utah, to Coachella Valley, California. Transitional labor gangs disintegrate; extended family remains as typical consumption/labor unit.

---

1933-1952. During Great Depression, federal intervention becomes crucial to future of Southern Nevada, by highway and Boulder Dam-Boulder City construction, and installation of electrical power generating equipment at Boulder Dam. Bureau of Indian Affairs expands services to Las Vegas Colony and Moapa Reservation, few though they still were. Effective integration of formal education of Southern Paiute children in Southern Nevada. Nearly all Southern Paiutes survive by wage labor.

---

1953-1963. Congress establishes policy of terminating federal trusteeship over Southern Paiute lands in Utah and ending services to Southern Paiutes there. Moapa Reservation and Las Vegas Colony in Nevada, Kaibab Reservation in Arizona survive as Southern Paiute demographic and cultural refuges. Dependence on wage labor continues. Southern Paiute claim for damages for land loss before U. S. Indian Claims Commission.

---

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1964-1981. SOUTHERN PAIUTE RENAISSANCE BEGINS.

Awards by U. S. Indian Claims Commission bolster family economies; fund professional reservation government by skilled, relatively well-(often self-) educated men. Reservation leaders obtain greatest per capita development investment in history for Southern Paiutes from federal Great Society programs, at the cost of further stabilization of residence and localization of formal political structure at Moapa, Las Vegas (and Pahrump), and Chemehuevi Reservations.

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1982 - Residents of Moapa Reservation, Las Vegas Colony and Pahrump group, and Chemehuevi Reservation are the surviving descendants of aboriginal Native American occupants of the region surrounding the IPP transmission line.

## CHAPTER II. INTRODUCTION TO STUDY

This report presents the findings of a study of Native American cultural heritage values in southern Nevada. The study was conducted by the Applied Urban Field School of the University of Wisconsin-Parkside, for Applied Conservation Technology, Inc. of Fullerton, California. It deals with the Nevada section of the Intermountain Power Project (IPP), one proposed by the Intermountain Power Agency. The IPP is described in the foregoing Management Summary. In order to petition for a Notice to Proceed, the IPP must provide documentation supporting general environmental and technical stipulations set forth in the Right-of-Way Grant. Those stipulations involve ten specific concerns: clearing, erosion control and rehabilitation, wildlife and habitat protection, access management, solid waste disposal, protection of visual resources, safety and health, cultural resources, water resources, and air quality. The present report presents the ethnographic value analysis and impact assessment for the Nevada section of IPP.

### NATURAL SETTING

The study area consists of a right-of-way 61 m. (200 feet) wide, extending from the Utah-Nevada state border to the Nevada-California state border. The northeastern end of this right-of-way enters southern Nevada just north of the 41 degrees 9 minutes north latitude. It runs generally westward to the edge of Dry Lake Valley, and turns southward along the western foot of the Burnt Spring range to cross the wide Delamar Valley. Crossing a mountainous zone, the right-of-way continues southward parallel to U. S. Highway 93, parallel to the Arrow Canyon Mountains. It veers to the east of the Sunrise and Frenchman Mountains east of the city of Las Vegas, and avoids Henderson to turn southwestward along the northwest edge of the Black Hills. After heading south again, the right-of-way turns southwestward through an unnamed pass in the McCullough Mountains toward the California border. Then it crosses less than a mile north of the north end of Ivanpah Lake and the south end of the Spring Mountains.

The study area lies entirely within Lincoln and Clark Counties, Nevada. In terms of altitude-determined ecological zones, the right-of-way crosses into Nevada at an elevation above 6,000 feet above mean sea level. It gradually descends to roughly 4,400 feet in Delamar Valley, and then to under 3,000 in Hidden Valley near the south end of Arrow Canyon range. Southeast of the McCullough range south of the Black

Hills, the right-of-way lies under 1,800 feet altitude, but then climbs again to around 2,800 feet near the California state border. In terms of vegetational assemblies, pinyon and juniper trees dominate the plants growing at higher elevations, while greasewood and sagebrush dominate those at lower elevations. Locally in spring-flow and riverine oases, mesquite trees and cottonwood trees dominate, or once did so, and the vegetation is quite diverse.

The study area crosses a series of alluvial basins with internal drainage from surrounding mountain slopes. The predominant drainage pattern is that of the Virgin River tributary of the Colorado River. Meadow Valley Wash, Kane Springs Wash, and smaller tributaries flow above ground or below generally southward into the Moapa River which empties into the Virgin River. These hydrological features fundamentally influenced aboriginal Native American life in the area, and utilization of the study area. They continue to affect human occupation of southern Nevada. Surface-flowing streams did and do allow horticulture and farming settlement. Springs sustained resource exploitation away from riverine oases, particularly the historic mining of gold, silver, and copper deposits.

#### NATIVE AMERICAN PEOPLES AFFECTED BY IPP RIGHT-OF-WAY

The proposed IPP right-of-way would cross part of the aboriginal territory of the Southern Paiute Tribe. About 1825, that territory extended from near the Mojave River on the southwest in Southern California to the southern edge of Sevier Lake in southwestern Utah. It included the desert west of the Lower Colorado River from Chemehuevi Valley northward, to the great bend of the stream. It included the territory north of the westward-flowing Colorado River upstream to a plateau zone between the Paria and Escalante rivers. Some Southern Paiutes lived south of the Colorado River east of its Little Colorado tributary, west of Black Mesa and south to Moencopi Wash.

The present study indicates that about 1825, the Southern Paiute Tribe was organized into two major socio-religious divisions, each centered on a share of the ribbon-like riverine oases of the Virgin River and its tributaries. The eastern division inhabited the plateau highlands, raised small crops on Colorado River sandbars, and caught many fish in Panguitch Lake and elsewhere. The core gardening territory for this eastern division seems to have been along Santa Clara Creek and the Virgin River above the mouth of the tributary. The head chief of this eastern division was identified by Euroamerican officials as headchief of all Southern Paiutes at least from 1859 to 1873.



The western division of the Southern Paiute tribe ranged generally west of the Utah-Nevada state boundary, from at least the north end of the Snake Range, Cedar Range and Bristol Range, Pahroc Range, and Silver Canyon Mountains south to Chemehuevi valley. All of the proposed IPP right-of-way across southern Nevada lies within the traditional territory of this western division of the Southern Paiute Tribe.

Previously published ethnographic-present studies described that portion of southern Nevada affected by the proposed right-of-way as the pre-colonization habitat of five so-called bands. These presumed bands were labeled the Panaca, Paranagat, Moapa, Las Vegas and Chemehuevi (Kelly 1934:554-556). The present analysis suggests that when Euroamerican colonization of southern Nevada began, the entire Western division of the tribe was known as the Paranayi. That term is translated into English as "people with their feet in the water." The water referred to is that flowing down Moapa River and the Virgin River into the Colorado, including Meadow Valley Wash upstream. From the Colorado north to the headwaters of Meadow Valley ran the ribbon-like oasis where all contingents of the Paranayi appear to have cultivated food crops. The appropriate anthropological term to apply to the Paranayi people is not clear. The western division of the Southern Paiute seems to have been rather populous and wide ranging to be properly labeled a band. It might properly be considered one of the two subtribes constituting the Southern Paiute tribe, where by using the term "subtribe" in a purely technical sense to indicate that the tribe formerly consisted of the western and eastern components.

When Euroamericans colonized southern Nevada and adjacent southwestern Utah, they drank from domestic water sources upon which the Paranayi Paiutes had depended. The immigrants cultivated the same irrigated fields on which the Paranayi Paiutes had raised their food crops. They felled the same kinds of trees for fuelwood as Paranayi Paiutes had used, but cut many more and larger ones to saw into timbers and lumber for mines and houses and many smaller trees to make into fence posts. That is to say that Euroamerican colonization almost immediately revolutionized the Paranayi Paiute economy. Simultaneously, Old World diseases transmitted from immigrants to Native Americans decimated the population of the latter. Depopulation fostered rapid social and cultural change as the most knowledgeable elders and specialists perished, and kin groups were riddled by mortality. By 1875, the Paranayi Paiutes had split up into two types of subsistence units. A number of small labor gangs were economically dependent upon specific Euroamerican settlements. Three refugee camps struggled to survive by exploiting natural resources using a combination of traditional and Euroamerican technology.

During the twentieth century, transitional labor gangs disintegrated as the services of a bilingual labor contractor

became less and less necessary. As Paranayi Paiutes learned to speak English and put on European style clothing, they traveled widely in search of wage labor, and negotiated their own employment. Single adults and nuclear families ranged over very long distances to seek employment in the cash economy of the region. Extended families provided children with emotionally supportive rearing and cultural continuity. These kindreds came to be based increasingly at the Moapa River Reservation, the Las Vegas Colony, Pahrump in Nevada, and just across the state borders at Indian Peaks Reservation in Utah, at Kaibab Reservation in Arizona, and the recently established Chemehuevi Reservation in California. Consequently, contemporary Southern Paiutes at Moapa River Reservation, Las Vegas Colony, and Pahrump in Nevada were consulted by the staff of the present study. Moreover, a religious leader residing at Kaibab Reservation served as the key Native American liaison person between the staff and Native American consultants.

In addition, the study staff interviewed Southern Paiute consultants living near the study area at Caliente, Nevada, and at Indian Peaks and Cedar City, Utah. After the period when labor gangs organized Southern Paiute social interaction, families ranged well beyond their own Holy Land in quest of wage labor. Some Paranayi and other Southern Paiutes actually resided in a labor camp near Delta, Utah, during the physical development of irrigation works there. At the same time, families of other Native American peoples also ranged into the Southern Paiute Holy Land in quest of remunerative employment. Thus, at least a few Goshutes found jobs on Euroamerican ranches in Clover Valley, Nevada. As one result, some Goshute children were born there (Steele 1974:23).

Aware of the pre-colonization proximity of Goshutes and Southern Paiutes, the study staff visited the Goshute Reservation located on both sides of the Nevada-Utah border. Like the Southern Paiutes, the Goshutes are one of the persistent peoples in the United States. Also like the Southern Paiutes, the Goshutes perceive themselves as still residing within their ancestral Holy Land. In other words, they perceive temporary residence at places such as a ranch in Clover Valley, Nevada, as essentially transitory habitation within another tribe's ancestral Holy Land.

#### ETHNOGRAPHIC SITUATION SUMMARY

At least some of the outcomes of the post-1825 period of Southern Paiute biological and cultural adjustment to Euroamerican domination are clear. Southern Paiute population has finally stabilized, and begun to increase. Consequently, Southern Paiutes with a distinctive ethnic perspective towards their ancestral Holy Land and its particularly precious spots

still reside in southern Nevada. Federal policy and law vest in Native Americans special rights of access to religious shrines and sacred areas. Planning a large construction project such as a major interstate electrical transmission line therefore requires consultation with those Native Americans likely to be affected. In southern Nevada that means the Southern Paiutes.

Dominant group pressures toward formalization of Southern Paiute political organization have resulted in formation of federally-recognized constitutional governments at Moapa River Reservation and Las Vegas Colony. Elected chairmen act as spokesmen for their constituents. Appointed liaison persons referred to as Official Tribal Contact Representatives (OTCR) have worked with the ethnographic study team to insure the incorporation of the perspectives of members of these groups in the present study. In addition, the Pahrump Southern Paiute community currently seeks federal recognition as an autonomous group, and its special concerns have also been voiced through the same mechanism for the present study.

Southern Paiutes with special interests and concerns relative to ancestral lands in southern Nevada also reside on the Chemehuevi Reservation in Southern California, and the Kaibab Reservation in northern Arizona. The present study takes into account the concerns of these individuals.

Not only have Southern Paiutes persisted as distinctive ethnic enclaves in three southern Nevada localities, but they have also started a socio-economic-cultural renaissance. This impressive initiative in commercial greenhouse fruit production, housing improvement, and construction work, self-governance, development and reservation expansion is most advanced on the Moapa River Reservation. The recent expansion of federal trust lands at Moapa River Reservation places that entity closer to the proposed IPP right-of-way than any other Native American reservation.

The Southern Paiutes in southern Nevada participate in the Inter-Tribal Council of Nevada. When they speak with decisiveness on any issue, therefore, their position is likely to be strongly supported by other Native Americans throughout the state. In other words, Southern Paiutes in southern Nevada whose ancestors long survived partly by making themselves almost invisible to members of the dominant ethnic group have come out of hiding. They are visible, audible citizens taking an increasingly evident role in policy making.

#### STUDY TEAM AND STRUCTURE

Applied Conservation Technology, Inc., provided the Inter-mountain Power Agency with professional consulting services

necessary to perform and coordinate environmental studies related to the IPP. In coordinating necessary studies of Native American cultural resources potentially affected by the IPP right-of-way across southern Nevada, ACT selected the Applied Urban Field School of the University of Wisconsin-Parkside to perform the ethnographic resources field studies the BLM requires for the Nevada section of the Intermountain-Adelanto Bipole I right-of-way. Dr. Richard W. Stoffle, Associate Professor of Anthropology at UW-Parkside, is Director of the Applied Urban Field School (AUFS) (see PLATES 3, 5 and 6).

The on-campus staff of the AUFS engaged in the present study included:

Mrs. Florence V. Jensen, Research Assistant,  
Administrative Coordination.

Mr. David B. Halmo, Research Assistant, analysis and  
writing.

Mr. James Knotek, Research Assistant, photography.

Mrs. Hazel Forney, Research Assistant.

Mr. Joseph Ripp, Research Assistant.

Ms. Susan Ervin, Research Assistant.

The off-campus western field staff of the AUFS engaged in the present study includes Director Richard W. Stoffle, and

Dr. Pamela A. Bunte, Assistant Professor of Anthropology,  
New Mexico State University, linguist-ethnographer (see  
PLATE 5).

Mr. Michael J. Evans, Department of Anthropology,  
University of Florida; ethnographer-surveyor-  
ethnohistorian.

Mr. Robert Franklin, Department of Anthropology, Indiana  
University; linguist-ethnographer.

Mr. Dan Bulletts, Moccasin, Arizona, Kaibab Paiute  
cultural consultant-research associate (see PLATES 3, 4,  
and 6).

The off-campus ethnohistorical field staff of the AUFS engaged in the present study included:

Dr. Henry F. Dobyns, Director, Native American Historical  
Demography Project (NAHDP), Center for the History of  
the American Indian (CHAI), The Newberry Library;  
ethnohistorian-editor.

Kristine L. Jones, research assistant NAHDP, CHAI, The Newberry Library, and Department of History, University of Chicago.

Dr. Omer C. Stewart, Emeritus Professor of Anthropology, University of Colorado; ethnography-ethnohistory consultant.

#### ETHNOGRAPHIC-ETHNOHISTORICAL ANALYSIS

As the ACT scope of work statement specified, the AUFS staff comprehensively reviewed published literature, mainly anthropological and historical, dealing with Native Americans in southern Nevada. The staff recovered relevant data from newspaper files and searched archives to the extent possible in the limited time available. The AUFS staff focused particularly upon both traditional and documentary evidence as to the location of tribal geographic boundaries in or near the study area. It analyzed and re-interpreted information about Southern Paiute settlement patterns and closely related subsistence techniques, particularly conversion of solar energy into storable food by intensive horticulture, planting of a large list of cultivars and transitional cultivars. This analysis necessarily required collecting and evaluating eye-witness accounts of resource procurement, processing, exchange and consumption. The AUFS staff paid special attention to the pervasive religious and ceremonial importance of the native flora and fauna at specific places. The ethnographic-ethnohistorical presentation in the present report attempts to provide the reader with an assessment of the relationship between traditional life-ways, historical changes imposed by Euroamerican colonization, and the nature of contemporary Southern Paiute behavior.

#### FIELD STUDIES

Professor Stoffle and Research Associate Bullettts have taken the lead in conducting field studies in southern Nevada and among Native American groups in northern Arizona and southwestern Utah. The AUFS has cooperated with Native American Official Tribal Contact Representatives (OTCRs) for every enclave contacted. The various OTCRs have selected qualified consultants in each group to voice ethnic concerns over the proposed IPP right-of-way across southern Nevada.

The entire field study staff of AUFS has obtained information about contemporary Southern Paiute uses of the ancestral Holy Land in southern Nevada. The staff has elicited information about the significance of ethnographic sites to

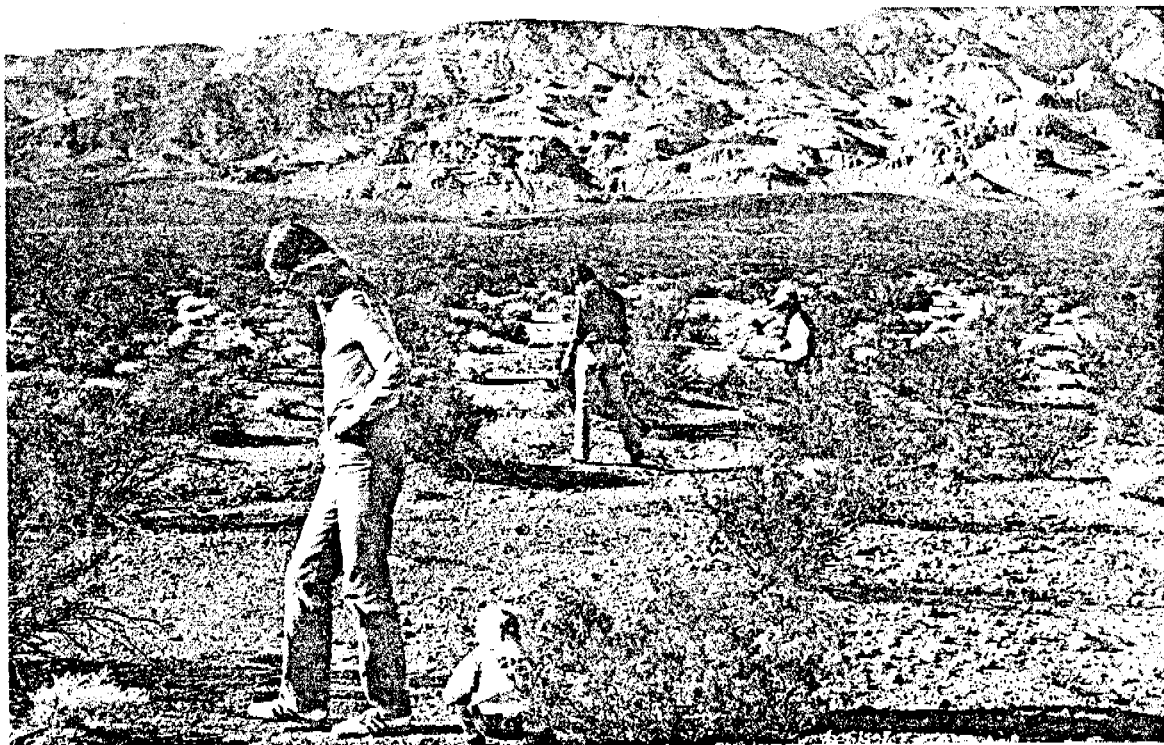


P-3. Dan Bulletts, Research Associate and Project Director  
Richard W. Stoffle at work recording data



P-4. Research Associate Dan Bulletts touching a creosote bush  
(Larrea sp.) growing with numerous other desert plants  
including barrel cacti (Echinocactus sp.) in proposed IPP  
right-of-way





P-5. Dr. Pamela A. Bunte (and daughter Rebecca), Project Director, Richard W. Stoffle and Research Associate Dan Bulletts in Eldorado Valley near McCullough Mountains.



P-6. Dan Bulletts, Richard W. Stoffle and Herbert Meyers, a Moapa elder, standing in proposed IPP right-of-way in Arrow Canyon Valley.



P-7. Philbert Swain, Official Tribal Contact Representative, Moapa River Reservation, behind a barrel cactus, in Arrow Canyon



Native American values simultaneously with a detailed archaeological survey of the Nevada section of the IPP right-of-way undertaken by Nickens and Associates Inc., Montrose, Colorado, for ACT.

The OTCRs participating in the present study are (listed alphabetically):

Ms. Geneal Anderson, Indian Peak Band, The Paiute Tribe of Utah.

Mr. Richard Arnold, Pahrump Paiute Tribe.

Ms. Cynthia Keoke, Confederated Tribes of the Goshute Reservation.

Mr. Phil Swain, Moapa Indian Reservation (see Plate 7).

Ms. Gloria Yazzie, Las Vegas Paiute Tribe.

The present report expresses the significance of Native American traditional values mainly in terms of provisions of the American Indian Religious Freedom Act of 1978, and the National Environmental Policy Act of 1969.

#### REPORT ORGANIZATION

This report is organized to serve the needs of several kinds of readers. The initial MANAGEMENT SUMMARY is designed for rapid perusal by the very busy corporate or tribal executive; it also orients other readers to the policy decisions that led to the present study.

The INTRODUCTION to the study very briefly describes the natural setting of the proposed IPP right-of-way in Nevada, and identifies the Southern Paiutes as the Native American people affected by the IPP right-of-way proposed across southern Nevada. It also summarizes the contemporary cultural condition of Southern Paiute enclaves in southern Nevada.

The third chapter summarizes the basic social scientific theories that underlie the analysis carried out by the AUFS staff, and outlines the methods of analysis.

The fourth chapter on SOUTHERN PAIUTE ETHNOHISTORY evaluates ethnographic and historical evidence as to tribal background, and adjustment to Euroamerican travel and later colonization after A. D. 1825. This chapter lays the conceptual and factual groundwork for understanding the Southern Paiute cultural heritage values presented in a fifth chapter based on extensive field research.

For reasons explained in the body of the present report, detailed, specific information about sections of the proposed IPP right-of-way especially sensitive for Southern Paiutes is presented in a confidential appendix. This appendix will not be as widely distributed as will the rest of the report. It is provided to reservation officials and Official Tribal Contact Representatives to enable them to insure the most accurate possible presentation of Native American concerns about the proposed project. It is provided to ACT, IPA, and BLM on much the same basis.

### CHAPTER III. RESEARCH DESIGN, ASSUMPTIONS, AND ACTIVITY

The present report attempts to present clearly in non-technical terms contemporary Native American concerns over possible adverse HVTL construction impacts on their cultural heritage. Clarity and accuracy dictate using technical terms in some passages, nonetheless. Those technical terms, and the analysis achieved by the present study rest, of course, upon theoretical and conceptual underpinnings. Concepts developed by numerous anthropological studies of cultural change characteristic of interaction between initially distinct ethnic groups guided analysis.

#### THEORY

Most specifically, Edward H. Spicer's (1971) concept of the persistent cultural system applies to the historic Southern Paiute experience. Southern Paiutes have existed for a long time in a contrasting cultural situation (Spicer 1971:796). They have maintained a cultural identity system besides their genetic difference from Euroamerican immigrants into their traditional territory. Surviving numerous conflicts Southern Paiutes have continually opposed forced assimilation into national society (Spicer 1971:797). They remain conscious that they still reside in their ancestral Holy Land (Spicer 1957; Dobyns 1960). They continue to speak the Southern Paiute language as well as English (Spicer 1971:798). They still observe traditional mourning behavior; some even abandon a dwelling in which someone dies (Anderson & Mike 1974:21), although the results are regarded as counterproductive by Euroamericans. Increasingly since World War II, Southern Paiutes at Moapa River Reservation and Las Vegas Colony and now Pahrump, have organized to achieve economic, social and political objectives (Spicer 1971:799). An ethnohistorical account summarizes Southern Paiute cultural system persistence.

The present report is also written very much in the framework of the concept of the Columbian Exchange (Crosby 1972) of germs and viruses as well as technologies, languages, and the migration of Old World populations to the Western Hemisphere. A major aspect of the Columbian Exchange has been a precipitous and major decline in Native American numbers (Dobyns 1966). Southern Paiutes were no more immune to Old World diseases than any other Native Americans. Examination of documents for the present study disclosed that major epidemic and endemic mortality reduced Southern Paiute population by well over 75 percent within a very short period in the nineteenth century. The inclusion of this demographic

perspective on historic Southern Paiute experience clearly distinguishes the present report from nearly all previous anthropological and historical studies of this people. Only one analysis (Stoffle and Evans 1976) previously dealt with demographic change among Southern Paiutes east of southern Nevada.

Another conceptual basis for the present analysis is that of historic cultural ecology. The bulk of the earlier anthropological descriptions of Southern Paiute culture and society not only ignored demographic changes, but also followed an outmoded brand of environmental determinism borrowed from cultural geographers. The present study does not assume that the extremely diverse natural environment which the Southern Paiutes inhabited uniformly shaped their traditional culture. It examines evidence of ways in which Southern Paiutes managed various ecological niches in their diverse environment (Dobyns 1981). This study presents in some detail eyewitness accounts of large-scale Southern Paiute conversion of solar energy into storable forms utilizable by human beings, by growing maize and perhaps a dozen other food-crops.

The present study presents eyewitness evidence for considerable intertribal trade of high-value commodities involving Southern Paiutes. The search for such evidence stems from a very large corpus of historical analysis of Native American and European-Native American trade. That literature directly contradicts the oversimplistic assumption made by some economists (cf., Belshaw 1979) that Southern Paiutes produced no exchangeable surplus. This evidence constitutes an important index of the existence among pre-colonization Southern Paiutes of an efficient system for distributing foodstuffs and other commodities originating in varied ecological niches to the entire population and beyond. The foot-trails that Southern Paiute feet marked on the land functioned somewhat like a transmission line. People traveling along those trails carried foods from high-altitude mountain slopes to low-altitude riverine oases, and vice versa, thus distributing cultivated and collected energy in accord with the nutritional requirements of the total population. Historically, surviving Southern Paiutes have substituted travel to cash-recompensed jobs for earlier foot-travel, utilizing Euroamerican technology in the form of automobiles and highways. Yet, the foot-trails still visible in the Southern Paiute Holy Land possess symbolic significance to contemporary Southern Paiutes. Symbolically, those trails are sacred although they are no longer economically functional.

Culture change theory includes a distinctive set of concepts concerning cultural revitalization movements (Wallace 1956). Such concepts lead to the conclusion that Southern Paiutes in southern Nevada appear presently to be in the early phase of a largely secular cultural and economic revitalization.

movement. Inhabitants of the Moapa River Reservation are taking the lead in this ethnic renaissance, achieving a marked demographic expansion of their population for the first time in a century.

## THE LEGAL MILIEU OF THE IPP-NEVADA PROPOSAL

### NATIVE AMERICAN IMPACT ASSESSMENT ISSUES

A number of federal and state laws and/or regulations call for conducting a study to assess the potential effects of a development project on Native American people and their cultural resources. Such a study, called here a "Native American Impact Assessment" or NAIA, occurs as part of a more comprehensive set of studies called an "Environmental Impact Assessment" or EIA (see journal Environmental Impact Assessment Review). A NAIA may be placed in any one of several sections of the EIA set of studies. For example, a NAIA may be defined (1) as part of the "Cultural Resource Management" or CRM studies where there will be a close relationship with the archaeology research (Dickens and Hill 1978). On other projects, a NAIA may be defined (2) as part of the "Social Impact Assessment" or SIA studies where Indian economic, demographic, and sociological impacts can be discussed with cultural issues and the combination compared with the local non-Indian population (Finsterbusch 1980; Finsterbusch and Wolf 1981; Leistritz and Murdock 1981; see the journal Social Impact Assessment). In still other studies, a NAIA may be given (3) its own category and termed an "Ethnographic" or "Native American Values" study. The present report falls within the latter category. It is, therefore, limited in its scope to a discussion of Native American cultural patterns set within an historic perspective.

The issues of where Native inputs belong in an overall set of EIA studies and even when Native American inputs should be made a part of the EIA set are still very much topics of regional and national debate. Thus, many of the procedures and interpretations presented in this chapter belong to a point in the debate rather than being final interpretations of the laws and regulations that influence NAIAs. Despite the currently changing legal milieu within which NAIAs are conducted, most of the following assumptions are widely accepted and some even have been published as part of the on-going debate (cf Stoffle, Jake, Evans, and Bunte 1981; Stoffle, Jake, Bunte, and Evans 1982).

### FEDERAL REGULATIONS.

As potentially impacted cultural and historic resources,

Native American sacred areas should be studied according to the Congressional Declaration of National Environmental Policy (83 Stat. 852). The Historical Preservation Act (80 Stat. 915) supports the need to study Indian cultural resources by encouraging the "historic preservation" of objects significant in American history, including archaeological sites and culturally important locations. Finally, the American Indian Religious Freedom Act of 1978 (92 Stat. 469 or PL 95-341) defines the special status for sacred places, artifacts, plants, and animals of Native American peoples in the United States. This law guarantees American Indians access to sacred sites, including cemeteries, required in their religion, and the freedom to use in the practice of their religion sacred natural species and resources, even though these resources may no longer be controlled by the Indian people.

The final Council on Environmental Quality (CEQ) regulations on the National Environmental Policy Act (NEPA) that appeared on November 29, 1978 in the Federal Register (Vol. 43 #230:44978-56007) clarify the appropriate role of Indian Tribes as participants in the NEPA process. According to Section 55989, Indian Tribes should have early knowledge of projects, are invited to participate in the formulation of issues and in the research itself, and are invited to comment on drafts of reports before they become available during the "Public Comment Period." They have these rights, "whenever a project can impact Indian people living on a reservation." The status of non-reservation and off-reservation Indian people is not specified.

#### STATE AND LOCAL REGULATIONS

A discussion with Stan Rolf, District Archaeologist of the Laa Vegas District, Bureau of Land Management confirmed that federal regulations directly apply to the IPP. This is the case primarily because (1) so much of the line passes over BLM lands, administered by the Bureau of Land Management, (2) there are no major incorporated towns directly impacted by the IPP right of way, and (3) the State of Nevada has few laws or regulations that specifically address Native Americans and their resources located beyond reservation boundaries. In those few portions of the IPP right of way that cross state land, the State of Nevada Antiquities Act will be the most relevant legislation. This act, however, primarily applies to physical artifacts of prehistoric and historic value.

#### CONTROL OF INFORMATION

While the control of cultural resource research data is rarely specified by law, patterns of control are defined by

professional ethics and usually specified in contracts. Anthropologists regard the ethnographer's relationship with a person (often termed informant or consultant) who provides information about his/her culture and society as being similar to the lawyer-client relationship. Information deriving from an ethnographic interview is held in field notes and considered private.

Analyses derived from field notes, however, are prepared for public consideration and become the property of journals or agencies which are publishing or funding the research findings. Such public documents are written by the ethnographer so that they meet the broad scientific goals of the research while providing maximum protection for the privacy of the consultant and his/her people.

The following understandings regarding Native American impact studies of sacred sites have been developed by the researchers over a period of years. These understandings have been found to be acceptable by tribal councils, public utilities, and government regulatory agencies.

Consultant Anonymity. It is BLM policy that ethnographers shall identify the Native Americans with whom they consult. In order that those consulted may speak with relative freedom, however, it is our policy to try not to include in a report any more information about the person who is quoted than is necessary to indicate the kind of authority with which the person spoke. Our study team will provide the BLM, separately from the report, a list of those interviewed, along with the information about group affiliation, age, role and status that the BLM requires.

Site and Area Confidentiality. This report will include in a confidential appendix, not for public distribution, which provides information on sacred sites and areas received from Native Americans which was given to us in confidence. This confidential appendix will also be distributed to the tribal councils representing the potentially impacted Native Americans.

The purpose of this section is to set out certain key assumptions that have guided our research. Some of these issues are (1) Which Native American cultural groups are potentially affected and therefore have the right to make comments about the resources of a particular study area? (2) What are sacred cultural sites and resources? (3) What is an appropriate or representative response from a Native American group? and (4) What is valid evidence and how much weight should it be given by compilers and reviewers of reports?

## DETERMINATION OF POTENTIALLY AFFECTED GROUPS

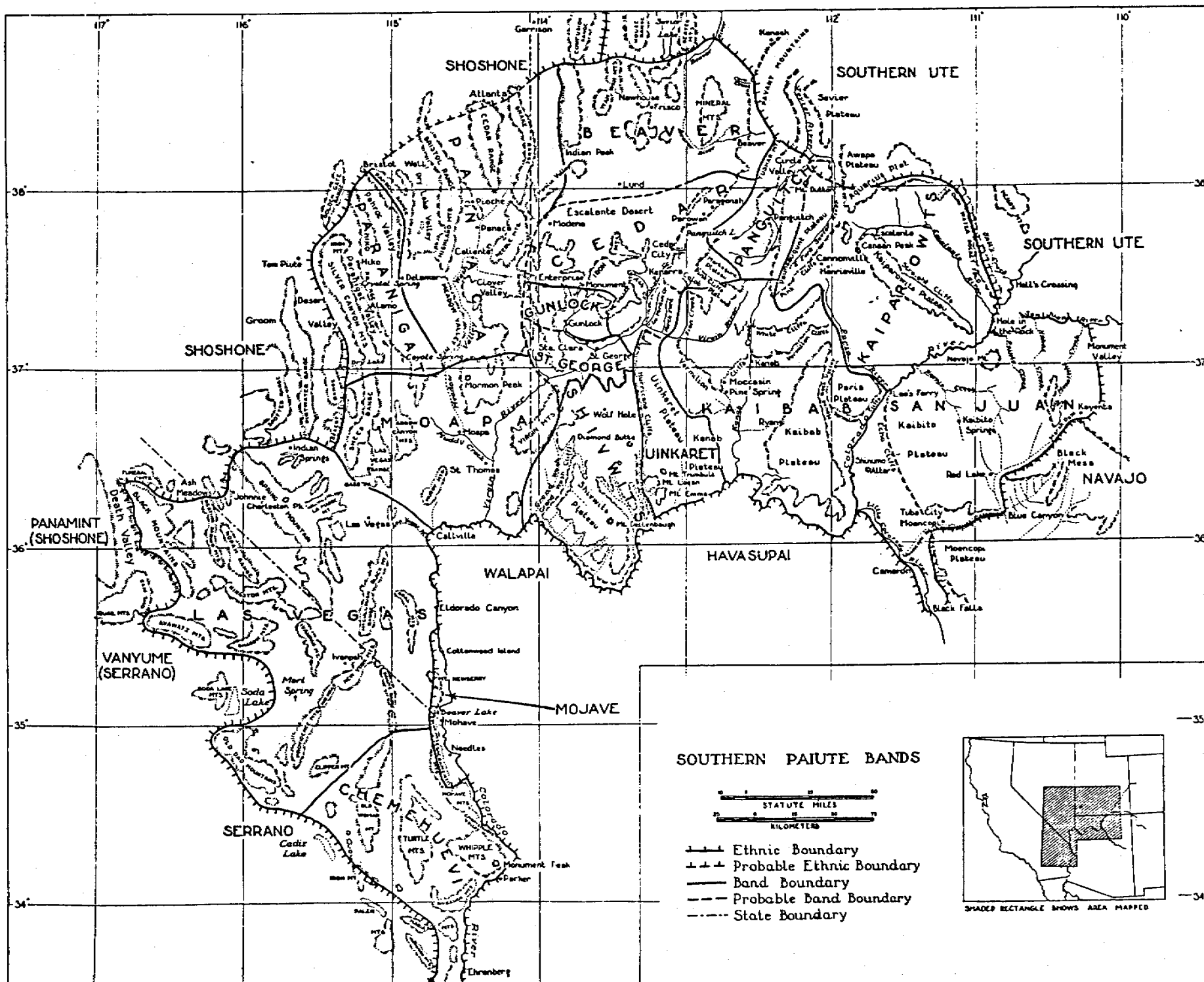
In order to determine which Native American groups are potentially affected and have the right to make comments about the resources of a particular study area, the criteria for being a "Native American group" and for being an "occupant" of the study area have to be established.

While much of the legislation regarding Native American resources has used the term "tribe," clearly it is being used in a narrow sense to refer to BIA-recognized, reservation-based Indian groups. A key issue here is whether or not an Indian group is totally sovereign over its members, resources, and territory. Swagerty (1979) should be consulted for a full bipartisan discussion of this issue. Because such a narrow tribal definition would exclude many Native American peoples from having the right to make responses and because previous NAIA reports have taken a broader definition of tribe (see Bean and Vane 1978, 1979; ERT 1980), it is recommended here that the term tribe be operationally defined to mean a Native American cultural (ethnic) group. Such a definition permits inclusion of linguistically, culturally, and socially distinct Indian groups even though they may no longer own their traditional lands or may not be recognized by the Bureau of Indian Affairs as an "organized tribe." That this can be a critical broadening of the definition for a NAIA study is demonstrated in the Paiute case: most groups have lost upwards of 95% of traditional lands, all Paiute groups in the State of Utah lost their reservation status a generation ago, other Paiute groups have been incorporated as cultural minorities on the Navajo Indian Reservation, and over half of the Nevada Paiutes are not officially recognized according to their traditional band affiliations.

A second criterion for establishing which groups are potentially affected is that of a group having traditionally occupied portions of the study area. Here we find two ways of making such a determination. The most common definition of "occupancy" refers to a Native American group who occupied portions of the study area on a full-time basis at the time of Euroamerican contact. The terms "aboriginal inhabitant" and "traditional territory" usually refer to such a group and their land. A second definition of "occupant" is a Native American group which currently lives in the study area on a year-round basis. Each definition assumes that residence in the study area caused the Native American group to incorporate natural features of the area into its cultural definition of social-self.

The general study area involves the traditional territories of Southern Paiute peoples. When the proposed IPP right-of-way is placed on the authoritative contact period base map drawn by Kelly in 1934 (see Map 3) it can be seen that





portions of Las Vegas, Moapa, Paranagat and Panaca band territories are directly crossed. In addition, previous NAIA field research conducted by Stoffle and Evans during the Allen-Warner Valley project (Bean and Vane 1979) revealed that Pahrump Paiutes had traditional trails to the Colorado River that passed through Las Vegas Paiute territory. Pahrump Paiutes also specified locations near the Colorado River which were especially sensitive to them. A similar situation exists for the Beaver and Cedar bands who would have shared resources along the eastern boundary of Panaca territory. Such a pattern of sharing resources along band territory boundaries was also documented by Stoffle and Bunte during the 1980 Kaiparowits study (ERT 1980).

A factor of some importance is that the Pahrump, Paranagat, Panaca, and Beaver bands are not officially represented by any BIA recognized Indian tribe. The Pahrump case, briefly discussed later, indicates that members of unrepresented tribal groups usually will be registered as Indian people but may be scattered among a number of tribal rolls. The Pahrump members interviewed in 1979 said they traditionally had stronger ties with the Moapa than the Las Vegas bands but had clear connections with both and, given site-specific proposals, would like to speak as a separate tribe. Members of the Paranagat, Panaca, and Beaver bands are registered at Moapa, Indian Peaks, and Cedar and will have their views represented through those official tribal councils.

#### SACRED SITES AND RESOURCES

Any NAIA report should provide a definition of what Native American sacred cultural resources are and how they are to be identified. Since the passage of the American Indian Religious Freedom Act there has been a major attempt to specify how this law is to be translated into specific United States government agency regulations. A Federal Agencies Task Force (1979), in consultation with Native American traditional religious leaders, has summarized the thoughts of numerous interest groups regarding what Native American sacred cultural resources are and how they should be protected. That report has already stimulated great controversy (see White 1980), and recent articles (Arnold 1980; Rosen 1980; Winter 1980) suggest that the argument will continue.

For any specific NAIA it is necessary to find a middle ground in the definition of these resources that will be acceptable to most of the interest groups who have expressed their opinion on the issue. The following assumptions have been established by comparative studies of religion and are generally acceptable to Native American leaders, federal

agencies such as the Bureau of Land Management, major corporations, and professional anthropologists. It is assumed that human groups vary in the degree to which they define portions of their society, culture, and material resources as sacred rather than secular. It is also assumed that when compared with many other ethnic groups in contemporary United States society, Native Americans generally define more of their social, cultural, and material resources as sacred. It is assumed that among sacred resources or sociocultural patterns some can be more important than others and that this relative importance can be changed over time by group consensus. Inasmuch as the sacredness of these resources can and does change through time, it is assumed that no NAIA of Native American sacred resources is complete without consulting with the potentially affected group. Therefore, a Native American group can define as sacred a wide range of resources--from the food they eat, to the places they once lived, to activities they do, to their ancestors' burials, to the trails they once traveled upon--and only they can make such a determination.

The assumptions help place in perspective apparently conflicting responses regarding potential impacts on sacred resources. So, for example, a Native American person can say, without the statements being in mutual conflict, that all of the land is sacred and that a specific area is clear of sacred resources and will not be harmed by construction. In the first case the response is to the general idea of having the development occur at all; the latter is a conditional response which means that if the project goes ahead, a particular area has the fewest cultural resources.

#### ETHNOGRAPHIC RESOURCES POTENTIALLY AFFECTED BY IPP-NEVADA

Southern Paiute peoples have occupied the desert land of the IPP study area for at least 800 years (Euler 1964:379). Some scholars have viewed their presence in this harsh land as a sign that they were a people dominated by their environment and by their more powerful neighbors. From such a perspective, the plants and animals of the desert are natural elements of the environment and not the product of human activity. In contrast to this view, recent research suggests that Southern Paiute peoples significantly managed and therefore modified their environment (cf. Kehoe 1981; Stoffle and Evans 1976; Stoffle, Jake, Bunte and Evans 1982). Instead of being dominated by the desert, they learned to "husband its resources;" Southern Paiutes consciously adjusted plants and animals to the many desert micro-environments between 600 feet above sea level on the Colorado River banks to 11,918 feet at the summit of Navagant~~u~~ (Charleston Peak). By prudently and economically managing these "natural" resources, Southern Paiutes assured their own continued survival and population expansion in the desert. A knowledge of plant genetics is

suggested by this research as a major "cultural focus" (Anderson 1956; Shipek 1970, 1981). Over hundreds of years of "husbanding" the environment, Paiutes in effect made many of the plants, animals, and places of the desert into human artifacts.

In order to maximize available resources, Paiutes developed an "adaptive strategy" (Bennett 1976:273) involving seasonal movement in pursuit of the total spectrum of flora and fauna in the environment as well as cultivation of crops by flood plain, oasis, and riverine irrigation and dryland techniques. This wide-ranging semisedentary adaptation has been termed a "transhumant adaptive strategy" (Stoffle and Evans 1976:6). Our research suggests that this strategy, when combined with plant and animal husbandry, produced an environmental "carrying capacity" that actually exceeded the carrying capacity produced by Euroamerican strategies of full time farming and/or ranching. The transhumant adaptive strategy effectively utilized extensive desert tracts and supported denser populations than those previously estimated by Steward (1938).

Although it is impossible to ascertain the total range of natural food sources actually utilized by the Southern Paiutes, we can proceed toward an estimate by listing (1) those foods these people claim to have utilized, (2) foods that Euroamericans observed Southern Paiutes utilizing, and (3) foods present in the area and known to have been utilized by neighboring Native Americans. Our ethnohistorical investigations of Southern Paiute ethnobotany indicate that they utilized 64 families of flora encompassing at least 170 species of edible plants (Hill and Stoffle 1978). These food sources ranged from cacti to grasses, to berries, to trees such as pinyon and juniper. Leaves, stalks, bark, fruit, roots, and any other edible portions of these plants were utilized (Palmer 1878; Kelly 1964; Woodbury 1965). The list would be greatly expanded were it to include an equally impressive array of medicinal plants that often have nutritional value.

In similar fashion, the Southern Paiutes utilized most of the varieties of fauna found within their territory (Kelly 1964:47-55). Hoofed animals utilized included bighorn sheep, antelope, mule deer, and elk. Rodents eaten included cottontail rabbit, chipmunk, deermouse, muskrat, rat, beaver and porcupine. Carnivores included mountain lion and bobcat. Birds of many varieties were taken from specially constructed hunting blinds. Reptiles including snakes and lizards were frequently eaten. Insects consumed included locusts, green caterpillars and ants. Euroamericans commented at great length on the fact that no portion of the area's fauna from ants to deer was overlooked as a food source. The native pattern of total faunal utilization was extended to Euroamerican animals such as horses, cattle, sheep and donkeys when these were

brought into the area. Native hunters caused much consternation among the Euroamericans who owned animals killed as game.

Southern Paiutes were not merely effective consumers and keepers of natural foods, but also planted irrigated gardens of maize, beans, and squash near permanent water sources. Although it has been suggested by some researchers that the Southern Paiutes were non-cultivators (Kelly 1964:36), such a position is not supported by historic and archaeological evidence. An early Spanish explorer, Escalante, in 1776 described the Southern Paiutes as cultivating the irrigable lands within their territory (Euler 1966:33). The Mormon explorer, John D. Lee, in 1852 observed Paiutes in the Santa Clara River Valley cultivating 100 acres of corn and squashes (Woodbury 1944:140). A few days later, in the narrow but fertile stream bottoms of the Virgin River at the edge or possibly in Kaibab Paiute territory, Lee again observed that: "Their corn was waist high; squashes, bean, potatoes, etc. look well. They had in cultivation four or five acres; their wheat had got ripe and was out" (Woodbury 1944:143). When Euroamericans first traveled down the Colorado River, past Southern Paiute territory, they found small fields of maize planted along the river (Powell 1957:100). Powell stated that all of the Southern Paiutes cultivated the soil prior to settlement of the area by Euroamericans (Powell and Ingalls 1874:53).

In summary, it has been necessary to provide an alternate explanatory frame of reference in order to understand the inclusiveness and emotional intensity of Southern Paiute expressed concerns over resources that Euroamericans normally define as "a part of nature." During the Allen-Warner Valley study, for example, Las Vegas Paiutes repeatedly mentioned a concern that power line access roads would result in the killing of small mammals and reptiles. The desert tortoise was singled out as a common example of an animal that would be harmed. Indian people discussed at length examples of times when they had stopped cars on busy interstate highways in order to save a tortoise from harm. Such paternalistic statements may seem insincere exaggerations until they are viewed as role components associated with desert animal husbandry. Similar paternalistic statements emerged regarding the relationship between Indian people and their plants.

The most widely recognized type of Native American cultural resources are physical artifacts such as home sites, grinding stones, mortar depressions, arrowheads, petroglyphs and pictographs. These are found throughout the study area. Less widely recognized but nonetheless critical cultural resources are Native American trails, places where events of historic or cultural importance occur, and places of religious importance. While the trail is itself a physical artifact, it and the other places of cultural significance may not be associated with archaeological features. Their locations and

importance, therefore, can be determined only by interviews with Native American people. Finally, great concern has been expressed over the potential impacts on Indian burials.

#### NATIVE AMERICAN REPRESENTATIVES

Another basic question that must be answered in a NAIA concerns the appropriate or representative response from a Native American group. When a group is organized and recognized by the Bureau of Indian Affairs, the first level of contact by the NAIA researcher is the tribal chairman and council. Depending on the size of the tribe and the degree of concern over the proposed development, the council will either make an official response regarding the project or they will specify an appropriate committee to make a response. A much more complex situation exists when the Native American group is not officially recognized and may, therefore, not have a spokesperson who is empowered to speak for all the group. For example, one of the least organized and recognized Southern Paiute groups is the so-called "San Juan Paiutes," who are composed of the Willow Springs and Navajo Mountain groups. An undetermined number of these people (perhaps 300) define themselves as Southern Paiute, continue to speak the Paiute language, follow many traditional Paiute cultural ways, and live on lands that are officially designated as a portion of the Navajo Reservation. Although these people are territorially and politically incorporated by the Navajo Nation, they recently expressed the desire to be considered in a NAIA as a separate and culturally distinct group. Their spokespersons' status is based on informal group consensus.

The Pahrump Paiute Band of Nevada constitute a similar case. Like the Willow Springs Band, the Pahrump Paiutes were recognized in the early ethnographic literature on Southern Paiutes but the U. S. Government failed to confer on them tribal status or assign territory to them. Despite a lack of official U. S. Government recognition, the Pahrump Paiutes still attempt to function as an independent band whenever it is appropriate. They agreed during the Allen-Warner Valley regional planning study (Bean & Vane 1979) to have their views generally combined with the Las Vegas Paiutes but noted that they would probably speak as a separate group when and if site-specific proposals were made. They have an elected council and chairman.

In addition to establishing who is the appropriate official contact person for a Native American group, there still remains the question of how to elicit the most complete and representative response to the potential development project. This is an issue that must be carefully negotiated with the group's contact person, who must understand the

project and the type of impact study being conducted. The Bureau of Land Management, for example, has three classes of studies ranging from regional planning, to problem-specific, to site-specific research. In addition to understanding the nature of the research, working with the official contact person is especially sensitive when the tribal government is not viewed as representative of all groups within the society.

Beyond the official contact level, there are three broad types of Native American expert consultants and each will probably provide a different perspective on the group's sacred resources. These are (1) traditional religious practitioners, (2) group members selected at random, and (3) persons who have the most direct contact with the potentially impacted portions of the study area. Traditional religious practitioners have specialized knowledge of religious practice, religious materials, and religious locales that most persons in the group will not have. A random selection of group members, usually divided by age, sex, and whether residing on or off the reservation, will help specify the range of knowledge about, and the diversity of concerns for, sacred resources. Finally, consulting with persons who actually live within the study area or have lived there in recent times often provides the greatest detail regarding the presence and distribution of resources.

#### EVIDENCE VALIDITY

Inasmuch as a great majority of Native American sacred cultural resources exist on or are a part of lands no longer owned by them, it is often necessary to specify why a Native American person or group has a right to express concerns over the disposition of resources within a study-area. The major means of validating the right to make a response and determining the quality of the expressed concerns involves ethnohistory. An ethnohistorical methodology uses multiple data sources such as archaeology, documents, and oral history to "triangulate" research findings to help assure their accuracy. Ethnographic comparisons with living peoples or with contemporaries for whom more data are available serve further to validate ethnohistorical findings.

Oral history is a cornerstone of the ethnohistorical method. It generally is accepted as valid evidence by professional ethnohistorians who have used such data as testimony in Indian Land Claims Commission legal court actions since the early 1950s (Dobyns 1978). After (and sometimes during) such hearings, these findings are presented for academic scrutiny through publication in professional journals such as Ethnohistory.



Survey data are also extremely useful. They allow more group members to be reached and permit quantification of responses. The methodology and its resulting findings are widely accepted by non-social scientists who frequently serve as administrators of proposed development projects and regulatory agencies. The difficulties of conducting a survey as part of a NAIA stem from the limited time allowed by a typical project and the general distrust of surveys by Native Americans. To help resolve the first difficulty, Finsterbusch (1977:291) suggests the use of mini-surveys. In order to increase the reliability of these surveys, categories that are used to form the survey questions should be generated from interviews with key informants from the population to be surveyed. These expert judgments can later be compared with the mini-survey findings (see Stoffle, Jake, Evans & Bunte 1981 for a fuller discussion of this issue).

#### ETHNOHISTORY

This report presents an ethnohistory of the Southern Paiute people between the Spanish colonial period in the Southwest and particularly between 1776 and 1982. The ethnohistorical chapter provides an historical narrative that identifies major dynamics of cultural and demographic change among Southern Paiutes. It constitutes ethnic history insofar as it focuses upon the Southern Paiute ethnic group. Influenced by earlier scholarly publications dealing with Southern Paiutes, the authors initially anticipated that the ethnohistorical section of the present study would be simply ethnic history. In the course of research, and analysis of first-hand accounts of Southern Paiute individuals and group behavior at different times, the authors recognized that rather convincing evidence exists that prior to Euroamerican colonization in their territory, the Southern Paiute people constituted an organized tribe. The social boundaries of the ethnic unit meaningful to Southern Paiutes were larger than the tribe. Common speech and many identical cultural traits linked Southern Paiutes with Utes. Southern Paiutes and Utes were separated, however, by (1) the strong fear the former acquired of the power of Ute sorcerers, (2) the nineteenth century acquisition of horses and adoption of raiding band organization by certain Ute groups, (3) intermingled resource exploitation in the same key oases by various Southern Paiute camps, and (4) the influence upon all Southern Paiutes of a small cadre of High Chiefs, including one Head Chief at any given moment, viewed as quite sacred personages by other Southern Paiutes.

The leadership of the High Chiefs appears to have been more ritual than political and far more admonitory than authoritarian. Paradoxically, the non-political, sacred nature of Southern Paiute chieftanship made it all the more powerful in ways difficult for Euroamericans to understand.



Euroamericans in the United States are accustomed to secular government by authorities who tolerate organized religious denominations, and require their members to tolerate one another. Such a form of human relationships was utterly foreign to the thoughts of pre-colonization Southern Paiutes. They perceived their sacred High Chiefs as linking human beings to the supernatural, to the Scriptural Beings who created the Earth and the animals and plants and people who inhabited it. They lived in a social order and economic system almost completely within or colored by what Euroamericans mentally compartmentalize as "religion."

In tracing the social and conceptual revolution in Southern Paiute people that transformed their pre-colonization world into accommodation with Euroamericans in the twentieth century, the ethnohistorical chapter relies heavily on eyewitness accounts. That is to say that the authors have chosen to rely more on one of two major methodological thrusts in ethnohistorical analysis than the other. One is to rely on historic eyewitness accounts to reconstruct significant events and cultural changes. The other is to utilize knowledge of contemporary ethnic culture in order to accurately interpret records made by observers who did not always understand what they saw (Spicer 1980). This latter procedure is also employed in the present study. When knowledge of the Southern Paiute versions of the Numic language helps interpret information recorded at some earlier time, that knowledge obtained by interviewing contemporary Southern Paiutes is brought to bear on the analysis. So are oral histories collected in the course of the research conducted in order to prepare this report. Documentary sources of information about changes in Southern Paiute behavior, culture and demographics demonstrated that Southern Paiute society was radically altered during the half century between 1825 and 1875. Southern Paiutes who survived in 1875 had dramatically changed their culture, abandoning traditional fundamental postulates about the relationships between human beings, the environment and the supernatural. Surviving Southern Paiutes necessarily changed drastically in part because they were very few in number compared to tribal strength in 1852. Euroamerican colonization in Southern Paiute territory transmitted numerous lethal contagious diseases that caused Southern Paiute numbers to "melt away." Depopulation did not stop in 1875.

One cultural consequence of depopulation was simply that many specialists and sacred leaders perished before they could pass their abundant and specialized knowledge on to their descendants or other trainees. Thus, an unknown store of detailed Southern Paiute oral Scripture, knowledge about animals and plants, horticultural techniques, ritual, kinship relationships, etc., was forever lost when the people with this knowledge died. The demographic disaster experienced by Southern Paiutes dictated the methodological reliance on first-person descriptions of behavior during the initial years

of inter-group contact and conflict. The loss of information that occurred during depopulation was so great that a scholar can, to only a limited extent, depend upon contemporary Native American statements. For today's oral history cannot accurately portray events, and more especially relationships, in a tribal society of a scale that no one has seen functioning for a century and a half.

The main ethnohistorical methodology employed in the present study, therefore, relies wherever possible on eyewitness reports of Southern Paiute behavior. Every analytical effort has been made to take into account the biases inherent in various kinds of observers. Reports have been interpreted in terms of known patterns of behavior of other Native Americans in the Rancherian Culture Area (Dobyns and Euler 1980b), without burdening this study with comparative discussions. Reports of historic Southern Paiute behavior have been interpreted, in addition, in the light of general social science knowledge about the nature of intergroup relations between a dominant and subordinate ethnic group.

The ethnohistorical chapter presents insofar as possible a summary of historical changes with Southern Paiutes at the core of the analysis. It is not tribal history from a strictly Southern Paiute point of view. It is an analysis of the mind-shattering and frequently, literally lethal, impact of Euroamerican colonization on the Southern Paiute people, and the demographic and cultural adjustments surviving Southern Paiute people have made in order to survive and recently to begin to prosper under Euroamerican domination.

## RESEARCH TASKS

### PROJECT START-UP MEETING

This meeting was held in Colorado Springs, Colorado during the American Society for Ethnohistory annual meeting that began October 28, 1981. Most of the study team members attended and the location was in close proximity to basic literature resources on Southern Paiutes at the University of Colorado, Boulder. The start up meeting constituted the orientation session for each of the senior members of the study team. The study team met with ACT's Cultural Resource Project Manager to clarify various points of the project scope of work and scheduling.

### NATIVE AMERICAN COMMUNICATION NETWORK

The second task of the study team was to establish a

formal communication linkage with an official representative of every potentially impacted Native American group. This two way communication linkage is called the Native American Communication Network (NACN). The initial phone contact introduced the project and contained a request for each tribal chairman to appoint an Official Tribal Contact Representative (OTCR) to work with the study team. The list of formal contacts were: The Pahrump, Las Vegas, Moapa, Indian Peaks, and Cedar City bands of Paiutes and the Confederated Tribes of the Goshute Reservation.

In order to obtain fully Native American participation and reduce miscommunication and mistrust of the research process, an OTCR from each group was hired for the duration of the project. A similar NACN had been developed during the year-long Kaiparowits Coal Development and Transportation study (cf. ERT 1980) and proved successful in providing potentially impacted groups with the time and necessary information for making an appropriate response to the project and its reports. Representatives were selected by the tribal chairman and/or tribal council. In mid-December, 1981, a meeting was held in Las Vegas involving the principal investigator and each of these project representatives. At this one-day meeting each representative had the opportunity to learn in detail about the project and to have any questions answered. After returning to the reservation each representative was the major link in the NACN, although other members of the tribe were also included in this network at the request of the tribal chairman or council. It was the responsibility of the tribal project representative to handle questions as they arose on the reservation, to set up the official meetings with the tribal chairman and/or council, to arrange for individual interviews with key informants, and to review and help formulate an official comment on the preliminary report. The NACN established and maintained two-way communication from project inception.

#### LITERATURE SEARCH, ANNOTATION, AND ASSESSMENT

A third task was to write the ethnohistory section of the report based on documents. Much of the basic literature regarding the potentially impacted Native American peoples was already available in research team files. These files exist due to previous consulting projects dating back to the U. S. Land Claims Commission Cases, due to members of the research team having made a long-term professional commitment to the study of these peoples, and due to previous NAIA research projects in the area.

To supplement existing files, a literature search involved (1) personal visits to nationally recognized collections of Native American materials such as the Newberry Library, and (2) computerized information searches. The former yielded original

documents while the latter helped the study team access recent books and articles on the area.

The literature search was also conducted while in the field. Local city and county libraries in Las Vegas, Pioche, and Cedar City were visited.

A common annotation style and composition was defined at the beginning of the project. Throughout this process of searching and annotating relevant literature, an assessment of its quality and potential uses was made by the research team.

#### IN FIELD ETHNOGRAPHIC INTERVIEWING

The purpose of the in-field ethnography was to provide Native Americans with special settings in which they could discuss the project and provide information related to concerns over the location of the IPP right-of-way. During the development of the NACN, the need for establishing an OTCR to work with the study team was discussed with the chairman. During that phone call, the tentative project schedule was discussed and a request for one or more on-reservation meetings was made. Previous experience had suggested that it was best to separate the chairman/council meeting from the public tribal meeting. Structuring these initial group meetings was the responsibility of the OTCR and the principal investigator. The timing of these meetings, however, was carefully negotiated so that the field work could be completed within the time and financial resources set by the contract between ACT and UW-Parkside. After the public tribal meeting(s), individual meetings occurred with (1) Native Americans who have lived in portions of the study area, and (2) Native American religious specialists and/or traditional leaders.

Throughout the field work period, the study team's Native American Indian research associate was in attendance at public meetings and at as many of the individual meetings as possible. His presence permitted conversations to occur in the native language between study team members and the audience. If our staff Native American could not attend a meeting, then Dr. Pamela Bunte was asked to serve in the capacity of translator.

Inasmuch as site-specific impact assessment is a goal of this study, on-site visits were conducted. The entire route was not traversed by truck or car. Instead, key locations were visited. Each visit included a linguist and/or the Native American research associate and a person from a Native American group who was recognized as knowledgeable about the area.

After direct interviewing was completed, key issues were formed into an easily read mini-survey. This survey was

developed with the assistance of the project's Native American research associate and the OTCRs (see Appendix B). The mini-survey concept was first proposed by Kurt Finsterbusch (1977) for use in social impact assessment (SIA) research. Its first known use in a NAIA was by Evans and Stoffle during the Chemehuevi section of the Devers-Palo Verde study (Bean and Vane 1978). It was later refined in the Allen-Warner Valley report to include a scaling of cultural resources (see Stoffle, Jake, Evans, and Bunte 1981). This survey has been returned by Native American people. Its results appear in Chapter Five of this report.

#### SPRING ETHNOBOTANICAL ON-SITE VISIT

Previous NAIA research conducted by the authors of this report documented expressions of strong concerns over the desert flora that make essential contributions to Southern Paiute nutrition, health, and religion. During the Kaiparowits study (ERT 1980), on-site ethnobotanical surveys provided a richness of detail not achieved in previous studies. These visits occurred in the early spring when numerous plants are gathered by Southern Paiute people. The Kaiparowits experience pointed out a further advantage of having growing plants, a Native American plant specialist, linguist, and ethnographer together while surveying ethnobotanical resources. Such a grouping produced the first combinations of exact location, specific usage, scientific name, and Southern Paiute name ever to appear in a NAIA. The process was greatly facilitated by Dr. Bunte's modified International Phonetic Alphabet (IPA) which was developed specifically for writing Southern Paiute language. Her modified IPA was stimulated by her involvement in applied linguistic efforts to facilitate Southern Paiute language learning. It has been successfully applied in educational hiking trail brochures, signs for a reconstructed traditional Paiute village, Paiute Alphabet book for children and many other language learning programs. The major value of writing Paiute flora names with Dr. Bunte's modified IPA system is that they can then be read by Paiute speakers who wish to validate the accuracy of the research's findings. Training to read Dr. Bunte's modified script has been provided for each OTCR.

The spring ethnobotanical on-site visit included Drs. Bunte and Stoffle; Steve Boyd, a professionally trained botanist; Dan Bulletts, the Native American Research Associate. On different days during their visit, various plant specialists from potentially impacted groups acted as local consultants. The four day trip occurred in early May.

## CHRONOLOGY OF FIELD WORK

### INITIAL PLANNING

Following the project staff orientation meeting in Colorado Springs it was decided that an additional trip into the field would be necessary. Previous interviews with the Native American research associate revealed, and documents searched confirmed, the historic presence of a band of Shoshone in Paranagat Valley, very near the proposed IPP right-of-way. This band had subsequently been removed by the U. S. Government to the Confederated Tribes of the Goshute Reservation. In addition, Bulletts revealed that some Panaca band Southern Paiute people still resided in their traditional territory south of the town of Panaca near Caliente. For these reasons, at least one week of further in-field interviewing became necessary.

On November 5, 1981, ACT notified the Principal Investigator of their selection of the AUFS to do the required research for the Nevada section of the IPP however, official authorization to proceed with field studies was not received from ACT until December 11, 1981. The day before, ACT officially contacted tribal chairpersons of the Las Vegas, Pahrump, Indian Peaks, Cedar City, and Moapa Southern Paiute bands and the Confederated Tribes of the Goshute Reservation (see Appendix C). The literature search at Newberry Library and the arrangements for the in-field work were well underway before this time. The official project start up date was December 14, 1981.

### DECEMBER FIELD WORK

Once in the field, the study team members drove along the proposed route of the IPP right-of-way, recording field notes on cassette tapes and taking photographs at key points. Upon their return the study team members made telephone calls to the OTCRs to finalize plans for their first orientation meeting, which was to be held at Las Vegas Colony on December 17, 1981. The training session and public meeting were well attended. Earlier that day, study team members Evans and Franklin searched documents for relevant data at the University of Nevada-Las Vegas (UNLV), Special Collections. The following day, Stoffle, Bunte and Bulletts interviewed a Las Vegas Paiute woman elder. Later that same evening, an in-depth oral history interview was conducted by Stoffle and Bunte. During the next three days, December 19-21, additional interviews were conducted by the staff, who split up into teams. Interviews included: an elderly Las Vegas Paiute woman (Dec. 19 & 21); a Pahrump Paiute elder, accompanied by the Pahrump tribal chairman (Dec. 11); and another Las Vegas Paiute elder (Dec. 21).

During these three days, Evans and Franklin continued to search and screen documents at the Clark County Historical Society and UNLV Archives.

#### JANUARY FIELD WORK

The study team returned to the field on January 4, 1982, splitting into two teams. Stoffle spent the entire day working with Dr. Omer C. Stewart, project consultant, going through his files of original documents on Southern Paiutes at the University of Colorado. Stewart had testified for the plaintiff Southern Paiute before the Indian Claims Commission. The Paiutes eventually won their case against the United States Government for damages for aboriginal lands lost.

As previously mentioned, the purpose of the additional January fieldwork was to elicit responses from Shoshone people who in historic times had resided in the study area, and from those Panaca band people who either remained in their homeland near Caliente or had amalgamated with their neighbors from the Cedar City band. In addition, key informant interviews and on-site visits along the proposed right-of-way with Moapa tribal members were planned.

On January 6, Stoffle, Bullets, and Stewart traveled to Goshute Indian Reservation where a meeting took place with tribal elders and the chairman on January 7. IPP was explained through a series of topographic maps and lengthy discussions. The Goshute people were then asked if they desired to make comments on the potential impact of the IPP powerlines on their sacred cultural resources. They indicated that they desired to do so.

On those same two days the second study team, comprised of Bunte and Franklin, interviewed two Indian people living at Cedar City. This team also drove along the proposed route to Caliente with a side trip to Pioche to visit the Lincoln County Museum. On January 8, Bunte's team interviewed two additional elder women from Cedar City.

The following day, January 9, both teams met at Las Vegas Colony for a meeting with the Nevada OTCRs to update them on the status of the project.

On January 11, both teams traveled to Cedar City for the public hearing to elicit concerns of other Panaca or Pahrnagat people who had moved from their traditional territories to reside with their Cedar City neighbors. This meeting also made available an additional key person for interviewing. This Indian consultant was interviewed on January 12 at Cedar City.

On the following two days, January 13 and 14, Stoffle's team drove along the proposed right-of-way with the tribal representative and chairman from Moapa, stopping for an on-site visit in the Arrow Canyon range to elicit information with regard to the importance of the mountains and canyon to the Moapa people. The following day, the team traveled up through Meadow Valley Wash. This area has been little studied; it may have been an important agricultural area for Moapa Paiutes. Later that same day, the team returned to Las Vegas for another public meeting with tribal representatives and other tribal members. Throughout this trip, Bunte and Franklin spent several hours searching through documents at Southern Utah State College Library.

#### FEBRUARY ARCHAEOLOGY-ETHNOGRAPHY VISIT

Late in February, Stoffle flew to Los Angeles to meet with ACT project coordinators. Following that meeting, on February 28, Stoffle and ACT personnel met with the Nevada OTCRs in Las Vegas to discuss the progress of the field studies. Subsequently, Stoffle, Dr. Edward Weil an ACT's Cultural Resource Manager, and Dr. Paul Nickens, Principal Investigator for the IPP Archaeological Resources Study in Nevada, drove along the proposed route, recording field notes and photographing additional information at key locations.

One major decision resulting from the February discussions involved the spring ethnobotanical on-site visit. Due to a long and hard winter season, the team had to postpone the ethnobotanical on-site trip. The climate went from cold and snow-covered to cool and muddy; consequently, flowering plants had not fully blossomed. In some areas access to the IPP right-of-way was also prohibited by the climatic conditions. The spring ethnobotanical trip was rescheduled for May.

It is important to note here that throughout the duration of the in-field work, December 1981-March 1982, regular communication was kept between project staff/study teams, ACT personnel, project archaeologists, consultants, official tribal contact representatives, tribal councils and tribal chairpersons.



CHAPTER IV. PACK TRAINS TO WAGON TRAILS TO TRUCKS  
TO TRANSMISSION LINES: SOUTHERN PAIUTE ETHNOHISTORY

The arid character of lowland Southern Paiute territory made drinking water a crucial resource for human habitation of the entire area. It also made surface-flowing streams that could be diverted into irrigation canals to raise food crops doubly important. Consequently, long stretches of the boundary of Southern Paiute territory followed the Colorado River and other streams, rather than the crests of mountain ranges that defined valleys. This pattern differed from the conceptualization and definition of tribal territory by the neighboring Mojaves. Mojaves raised abundant food on flood plain fields naturally irrigated by the spring flooding of the Colorado River, which also furnished them with plenty of fish. Mojaves viewed their territory as extending up to the crests of the mountains on both sides of their valley (Kroeber 1974:4, 235). Compared to Southern Paiute territory, Mojave tribal land was small and densely populated.

Actually, Mojaves traveled across the lands of Southern Paiutes and other ethnic groups to visit the Pacific Coastal Gabriellino to trade for marine shells (Coues 1900:I:237, 307). Those Southern Paiutes long distinguished as Chemehuevis occupied an extensive desert range with only scattered and scant water sources. Consequently, the Chemehuevis, like other Southern Paiutes, ranged to major streams that defined the limits of their economic land use. On the east, they ranged north to Moapa River and south to Cottonwood to plant crops (Alley 1977:4; Coues 1900:I:220-25), and to Cottonwood Island in the Colorado River north of Mojave Valley (Ives 1861:56, 88). After 1827, at least the Chemehuevis established a riverine oasis base in Chemehuevi Valley farther south. On the west, they perhaps ranged to the Mojave River, although Vanyume resided on that stream, and Marl Springs appears to have marked the formal boundary between Vanyume and Chemehuevi in the eighteenth century (Coues 1900:I:238, 258, 306).

In the same way, more northerly Southern Paiute bands ranged to the Colorado River on the south, except for the Willow Springs group on the eastern frontier. They lived south of the Colorado River where nineteenth century Navajo invasion has obscured the aboriginal limits of Southern Paiute territory. These bands ranged north along the upper Sevier River (Brooks 1977:49). Thus, the pattern of Southern Paiute territorial land-holding was almost exactly opposite to that of the Mojaves. A major stream constituted the resource core of Mojave territory, with mountain ridges defining its frontiers. While small streams such as the Virgin River formed a comparable core of Southern Paiute territory, the major Colorado River and other waters such as the Mojave River,

Sevier River, and Little Salt Lake formed much of the tribal territorial frontier, along with both mid-valley and mountain border landmarks.

While the Southern Paiutes were semi-sedentary riverine oasis villagers, they were also transhumant. That is, they moved out from the riverine oases to hunt big game in the broad valleys, in the desert mountains and on the plateau to the east, and to collect wild plant foods in proper season. Consequently, Paiute foot-trails crossed tribal territory. Descending Beaver Dam Wash early in November of 1849, George Q. Cannon (1954:241) noted the abundance of Southern Paiute paths marked on the land: "There were plenty of trails; but they ran in all directions over the country, being made by the Indians to suit their local convenience." In other words, most of the Southern Paiute trails did not parallel the stream in the direction the Euroamericans wished to travel, but led off at numerous angles from the riverine oasis toward upland food plant resources and hunting zones.

#### SOUTHERN PAIUTE HOLY LAND

Southern Paiute territory was far more to these people than an economically utilized region. It was their Holy Land in much the same sense that Palestine is the Holy Land of Christians, Jews, and Moslems (Spicer 1957:197, 213). It was the portion of earth where they had been created. Southern Paiute oral scriptures have been recorded, albeit in abbreviated forms, that resemble Christian Genesis and other myths in terms of placing the people on the earth. In Southern Paiute belief, originally there was only water. Ocean Woman (Hutsipamamaun) then created dry land (Laird 1976:148-149).

Once there was land, Creator Coyote and Wolf lived on Charleston Peak in Southern Nevada--Nuvant (Kroeber 1908:240) or Nivaganti (Laird 1976:149) or Nuvagant~~u~~ ("it has snow"). Creator Coyote later saw tracks of a woman, but when he caught up with her, she was a louse (Poo?wavi). Coyote propositioned her, and she agreed if he would build them a house. He ran ahead, built a house, and when Louse caught up she magically put Coyote to sleep, and continued on. This happened four times before they reached the Pacific Coast. Louse set out to swim to her home island with Coyote on her back. She dived, and Coyote let go and turned himself into a water-spider. He reached the island first, and was waiting for Louse when she arrived. Louse's mother wove a large basket while Coyote enjoyed Louse (Kroeber 1908:240; Laird 1976:150-151).

The old woman sealed the basket, and gave it to Coyote to tow back to land. As a water spider, he did so. As Coyote, he found the basket growing heavy, and full of curiosity, opened

it before reaching Nuvagantu. Louse's eggs had hatched in the basket, and human beings scattered in all directions over the land. By the time Coyote returned to Nuvagantu, only weaklings, cripples and excrement remained in the basket. On Charleston Peak, Wolf used his greater power to create the Chemehuevis and their kindred (Kroeber 1908:240 says Coyote; Laird 1976:151 says Wolf), the ingredients accounting for their skin color. So Nuvagantu, or Charleston Peak, is, in comparative perspective, holier to Southern Paiutes than is Mount Ararat to Christians.

Logically, Nuvagantu remains sacred to Southern Paiutes. To erect Euroamerican structures or construct a road on Charleston Peak would be to violate the holiest peak of the Southern Paiute people. The entire range shares to some extent the sacredness of the high peak. The summit of Nuvagantu rises higher than any other peak between the Sierra Nevada in California, and the San Francisco Peaks in northern Arizona (Kroeber and Kroeber 1973:45 n. 55). Thus, the height of Nuvagantu serves to remind all Southern Paiutes living within sight of it who have heard their ethnic creation story that they remain within their tribal Holy Land.

#### GYPSUM CAVE

Southeast from Charleston Peak in the Spring Mountains lies the Las Vegas oasis, and farther along the Frenchman Mountains (Harrington 1933:9), on a limestone spur of the Frenchman range, near the head of one branch of Las Vegas Wash about 15 miles west of the Colorado River is Gypsum Cave (Harrington 1933:8). Southern Paiute would-be shamans sought supernatural power in this cavern. They offered tobacco or some other appropriating substance to the resident spirit upon entering, and stayed overnight (Kelly 1939:163). When an archeologist examined the cave about 1925, he observed "a few evidences of relatively modern Indians" near the entrance (Harrington 1933:6).

The archeologist desecrated the Southern Paiute cave by excavating it in the early 1930's. He thought that most of the deposits dated from an occupation by Paleo-Indians who lived when giant ground sloths still roamed the area (Harrington 1933:7, 14ff). The cave had by the 1930's already been visited by residents of Las Vegas, 16 miles to the west, on recreational trips.

Despite Euroamerican intrusion into Gypsum Cave, the cavern, and adjacent Frenchman Mountain, like Charleston Peak and the Spring Mountains to the northwest, retain their essential sacred character in Southern Paiute belief. Gypsum

Cave is one of those sacred places where shamanistic power may still be sought.

## SOCIAL STRUCTURE

The pre-contact social and religious organization of the Southern Paiute is far from clear. Reconstructions based upon ethnographic investigations conducted in the 1930's and later almost certainly are not accurate. By the time modern ethnographers began to interview Southern Paiutes, decades of intergroup contact and determined efforts by LDS Church members and others to seize authority over Southern Paiutes had fundamentally altered the autonomous socio-political and religious system. So informants in the 1930's remembered a much attenuated and changed form of political leadership and a greatly secularized society. While ethnographers have consulted documentary sources of information about Southern Paiute leaders during the early years of intergroup interaction, none has consulted all of the extant documentation. Probably even all that exists does not describe very clearly the pre-contact structures that endured into the early intergroup contact period.

Given all of these methodological difficulties, what can be said here by way of a brief summary must be tentative and in some measure speculative. It appears that a rather small elite provided the Southern Paiutes with socio-religious leadership. While male leaders have been referred to as High Chiefs, they functioned as ritualists rather than political officers (Laird 1976:24). Some federal officials called Tutseguvits the head chief for a decade, from 1859 (Forney 1859b:73) until 1869 (Fenton 1869:203). Then another official early in the 1870s (Powell 1873) thought that a single tribal chief called Tagon exercised some authority over all Southern Paiutes. That perception may well have been accurate and a principal chief may have played a more important pre-contact than post-contact role. Euroamerican colonization isolated wage workers from one another, thus forcing local labor gang leaders to become autonomous and perhaps displacing traditional leaders.

Clearly an aboriginal elite composed of theocratic chiefs existed. Such leaders occupied a special status with special symbols very visible in pre-contact Southern Paiute society. First of all and probably most basically, members of the elite possessed an aura of priestly dignity. Secondly, Southern Paiute culture differentiated the elite by a sumptuary rule. So-called high chiefs could wear turquoise. Third, the theocratic elite spoke a special language known as tivitsi'ampagapi (Real Speech) as well as normal Southern Paiute. High Chiefs declaimed or chanted it with a strong accent. Living members of the elite preserved that special

elite language into the final decade of the nineteenth century. These leaders led at least regional polities made up of lineage bands (Laird 1976:24). In 1873, one identified High Chief active into post-conquest times provided sacred leadership for lesser chiefs heading at least eight local lineage organizations based at Potosi, Paroom Spring, Kingston Mountain Ivanpah, Providence Mountain, Ash Meadows, Amargosa and the Northern Chemehuevi (Fowler and Fowler 1971:104-105; Laird 1976:24).

Like the imperial leaders of the Tawantinsuyu in the Andes or the Triple Alliance in Middle America, Southern Paiute High Chiefs used a special class of career runners to carry messages between local social units (Dobyns and Euler 1970:44-45). After the aboriginal social structure disintegrated under Euroamerican pressure, the runners were young men (Laird 1976:47). Perhaps they had been young men under pre-contact conditions also.

The existence of a specialized corps of runners to carry messages from theocratic leaders to local social units indicates that Southern Paiute society was knit together by relatively frequent communications. Local lineages did not live autonomously or independent of the theocratic dicta of the small elite. The existence of the runners in fact, decisively negates the ethnographic reconstruction of Southern Paiute society as atomistic (Steward 1938).

By the 1870s, post-contact Southern Paiutes held Utes in great fear as sorcerers (Fowler and Fowler 1971:103). The degree of that fear seems to have reflected Southern Paiute loss of faith in their own High Chiefs as effective sorcerers under contact conditions. The High Chief elite appears to have disappeared as the last surviving High Chief died late in the nineteenth century. Secular leaders took over, in some instances more or less successfully imposed by representatives of the Bureau of Indian Affairs. In the 1870s, Powell and Ingalls perceived the functioning High Chiefs as heads of what they called confederacies of local groups (Fowler and Fowler 1971:109). By that time tribal unity had virtually disappeared, and the local groups were heterogeneous labor gangs at Euroamerican colonies.

Yet, there is some evidence that the Southern Paiute elite had been dynamically enhancing its power and privileges on the eve of intergroup contact. For, among the special marks of elite status was at least one special dietary item. Referred to as quali-beans (kararamurih in Paiute), these are known as black-eyed peas in English (Laird 1976:24). This plant was domesticated in the Old World and introduced to the Native Americans by Spanish colonists. Consequently, consuming black-eyed peas could not have been a pre-Columbian privilege of the Southern Paiute theocratic elite. That elite must have added the privilege of eating black-eyed peas during historic

times. Black-eyed peas spread from New Spain to a few select Southern Paiute gardeners prior to 1827, but probably after 1598.

The lineage of local group leaders appear to have learned to speak the elite special language. Whether they were members of a birth-right elite, or whether they rose from the ranks of local families and learned the attributes of elitism is hardly clear at this time. What is clear from native testimony and external observations is that Southern Paiute society was organized on at least three hierarchical levels. A theocratic-political elite consisted of a High Chief (mainly theocratic-magical) level, and a lower, Lesser Chief (theocratic-political) level. The bulk of the population did not engage in theocratic or ritual leadership, but participated as followers, as members of congregations.

Southern Paiutes closely resembled other Native American ethnic groups in the Rancherian Culture Area, whose peoples lived in scattered households, in their patterned access to irrigated oases fields. That is, those camps--probably composed of genetic kinsmen and their spouses--that ranged westward to the Mojave River planted their food crops on Moapa River or farther east in the Virgin River watershed (Coues 1900:I:221). They comprised part of the Paranayi Division. People under one chief ranged from Panguitch Lake to the Parowan and Santa Clara Creek headwaters (Smith and Steele 1852:1). The Santa Clara Valley appears to have been the major concentration area of summer cropping of camps ranging both east and west (Corbett 1952:50-55). These groups comprised part of the Eastern Division. All camps apparently enjoyed access to some riverine oasis irrigated crop producing fields. Summer social interaction welded tribal and divisional unity.

#### THE PAIUTE PRECONTACT HORTICULTURAL ECONOMY

The Southern Paiute tribesmen who ranged over a large territory in southern California, Nevada and Utah produced a significant proportion of the food which they consumed (see TABLES 2-5). Euroamerican colonization of the very riverine oases that once supplied cultivated foods for Paiutes makes it extremely difficult to accurately reconstruct the proportion of pre-contact Southern Paiute reliance upon horticultural products. For European colonists who seized riverine oases forced Southern Paiutes to rely far more on hunting and gathering in post-contact times than they had under pre-contact conditions. European colonization changed the Southern Paiute food economy, moreover, long before ethnologists began to study the Southern Paiute tribe.

Reconstruction of the pre-colonization Southern Paiute horticultural economy depends on relatively scant details reported by a few travelers across tribal territory. Scarce though available information is, it makes clear that Southern Paiutes raised food crops under irrigation at apparently all of the oases within their territory. The importance of horticultural food products in the Southern Paiute food economy was, perhaps, reflected in a primary settlement in riverine oases. Pre-colonization travelers' accounts describe Southern Paiute villages in or near the irrigated fields along the streams, from which foraging parties traveled at appropriate seasons to supplement horticultural produce by collecting wild plant foods. Hunters also moved out of the riverine oasis where rabbit, quail, dove and waterfowl were hunted, to seek big game such as antelope in the valleys, and deer and mountain sheep at higher elevations in the mountains. These geographical movements in seasonal patterns meant that Southern Paiutes were transhumant like other tribesmen in the Rancherian Culture Area such as Pimas and Yaquis (Steward 1938:234). They traveled a well-defined seasonal round from their relatively sedentary riverine oasis villages to supplement their cultivated foods and the abundant fish they caught in the streams, and some lakes. Southern Paiutes did not depend entirely on the bounty of uncultivated nature and moved in a completely transhumant way of life like some of their close linguistic relatives to the north and northwest. Riverine, creek and spring-flow oases provided the fish and irrigation water foundations of the Southern Paiute food economy. These resources made the Virgin River-Moapa River, Santa Clara Creek-Beaver Dam Wash stream complex the most important single ribbon oasis within tribal territory.

The very importance of oases in the pre-contact Southern Paiute food economy made that economy especially vulnerable to Euroamerican colonization, for Euroamerican resource exploitation technology depended upon oases in many of the same ways and for much the same reasons as Southern Paiute exploitation technology did. Specifically, the Virgin River watershed offered attractions to Euroamerican colonists identical to those it provided Southern Paiutes. Consequently, Euroamerican colonization concentrated in the Virgin River watershed. It constituted a military, if sometimes pacific, and biological invasion, conquest and occupation of Southern Paiute core territory that dispossessed the aboriginal inhabitants and terminated forever their pre-contact food economy.

#### MAIZE

Maize contributed significantly to pre-contact Southern Paiute food economy. This is clear from even the earliest nineteenth century travelers' accounts of journeys across

tribal territory. Late in December of 1829, Antonio Armijo's party of trader-explorers called a tributary of the East Fork of the Virgin River Rio Milpas, or Maizefield river. Descending the East Fork, Armijo's men probably named what is now known as the Santa Clara River (Armijo 1954:163, 166). The semi-sedentary nature of Southern Paiute habitation in the riverine oases is reflected in Armijo's laconic notation five days' travel farther down the Virgin River that he "found a settlement of Indians with rings in their noses." So accustomed to sedentary Native Americans was Armijo that he took riverine sedentary "settlement" for granted.

Santa Clara River. In 1848, Judge Orville C. Pratt (1954:354) spent three days traveling down the Santa Clara River from Mountain Meadow to the Virgin River. The first night he camped at Paiute maizefields, where he purchased "some corn of them & made them some presents." By that time, the Santa Fe traders considered the Paiute residents of the place "the worst on the route." At the same time, their irrigated fields and sedentary settlement were sufficiently stable for the traders to list the fields as a regular camping place on the route between New Mexico and California (Pratt 1954:366). The fact that the Paiute inhabitants of this sedentary oasis village sold Pratt maize indicates that they were, in 1848, growing a surplus of that crop for sale to passing travelers. Such behavior might suggest that the earlier New Mexican traders along the Old Spanish Trail had sought maize and other foods so often as to stimulate Paiutes to grow a surplus for sale.

In fact, growing surplus food for exchange appears to have been a pre-contact cultural practice among the riverine oasis Southern Paiutes. Euroamericans had first contacted these people near the confluence of the Santa Clara River with the Virgin River in 1826. Uncertain as to the intentions of Jedediah Smith and his men, the warriors approached the explorer, holding out gifts of food as symbols of pacific intentions. The first brave Paiute to approach Smith offered him a rabbit; the next dozen or so held out ears of maize "as an emblem of peace." Once the two groups began to communicate with gestures, they began to barter. Smith was able to trade pieces of iron for maize and pumpkins, that would provide his men with "a feast treat," (Brooks 1977:58). Curious about Paiute crop production, Smith found that the native gardeners had dammed the creek, so as to divert irrigation water "in a trunk" of a tree "to a place where it can be spread over the surface," (Brooks 1977:60).

In early October of 1848, Orville Pratt moved down river the next day after he camped at the maize-vending settlement. He reckoned the distance as 15 miles, although the traders considered it 30 miles. "Their cornfields we frequently saw today on the river as we came along" wrote Pratt (1954:354). In other words, Pratt saw intensive pre-colonization Southern



Paiute irrigation horticulture at the beginning of harvest season in 1848, and was impressed by the number of maize fields along the Santa Clara River.

Late in 1849, numerous LDS travelers followed the Old Spanish Trail route from Mormon Deseret to southern California. They traversed the riverine oasis segment of the trail in December, long after the harvest had been completed. The Southern Paiutes stayed well out of their way. Still, the LDS diarists were impressed by their horticultural fields. James S. Brown (1954:120) noted that "we came to some Indian farms where the savages had raised corn, wheat and squash." Walter Van Dyke (1954:303) "noticed along these river bottoms cornstalks and some squash or pumpkins still remaining on the ground, and also indications of irrigation." Addison Pratt (1954:81) considered the "first signs of cultivation" he saw to indicate the Paiutes "are very plentiful in this region."

Three years after the Gold Rush excitement, Latter Day Saints were exploring south from their settlements in northcentral Utah. One party explored along Santa Clara River. "On this stream we saw about 100 acres of land that had been cultivated by the Pintes (sic) Indians, principally in corn and squashes" (Lee 1852a:3). In mid-1854, Mormons again explored along the Santa Clara River. They reported seeing "some 200 Indians, camped with them unmolested" (Brown 1854:2). These Paiutes were growing maize (Corbett 1952:53). The efficiency of Southern Paiute crop production is evidenced in their continued ability to grow a surplus to give-exchange with Euroamericans. This enabled the Paiutes to greet early Mormon explorers with friendly food gifts. In the early fall of 1857, on upper Santa Clara River, one group of Mormons encountered "their chief, Kahbeets, who insisted on our stopping with them. We accordingly camped, the natives assisting in taking care of our animals, roasting corn for us and inviting us to help ourselves to their corn, some 5 acres of which stood close by" (Martineau 1857:27).

In retrospect, the man who guided the first emigrant train over the Old Spanish Trail remembered seeing both wheat and maize fields "with at least six acres in each, successfully cultivated by those Southern Paiutes, and that his company would have fared badly but for the wheat, corn, peas, and beans purchasd by them from the Indians" (Forney 1859a:734).

Moapa River. In 1848, Orville Pratt cut across the uplands between the Virgin River and its Moapa River tributary to shorten the all-riverine route. Again, Pratt (1954:355) "found a large body of Indians--Paiutes." Once again, "From them we bought some green corn and beans. And what a meal we made!" Whatever Pratt may have meant by "a large body" of Paiutes, he saw and recorded another sedentary riverine oasis settlement at the beginning of a fall harvest season prior to Euroamerican colonization. Six years later, in May of 1854, a

Mormon party passed through the Moapa River Paiute oasis. The horticultural village population was large: "We saw about 150 Indians, men, women and children at their wickeups...Our camp was full at the same time, and we could see them among the meadows and hills in every direction." Among other food crops corn was "arranged in beautiful rows, with little ditches for water between each row, and large ditches at proper distances" (Pratt 1854). In June of 1854, Mormon colonists from Fort Harmony explored Southern Paiute territory beyond their outpost. Descending first Ash Creek and then the Virgin River, they struck the Santa Clara. "There is some good land cultivated here....Here were five acres of good wheat, all headed, and some of it ripe; also corn,..." (Brown 1854:2).

In September of 1856, LDS missionaries from Las Vegas explored a short stretch of the Colorado River, up the Virgin River and the Moapa River. On the 11th the Mormons passed an Indian "camp." "Their corn was just ripening. They all seemed quite friendly and gave us some corn to eat" (Jensen 1926:243).

Beaver Dam Wash. LDS groups traveled down Beaver Dam Wash in November of 1849 to reach the Virgin River just above modern Littlefield, Arizona. They, too, saw post-harvest Southern Paiute fields. Henry W. Bigler's (1954:153) party "Camp't in an indian cornfield. the corn was stripted and the standing foder left and was very good." Charles C. Rich (1954:185) recorded that the Mormons "named" Corn Creek, a tributary of Beaver Dam Wash, because they found a corncob at a Paiute cooking fire from which the natives fled on the approach of the Euroamericans. Farther downstream, the migrants "found an Indian lodge, pot on boiling...corn cobs, pumpkin seed."

Sixteen miles downstream, the same party camped on a maize field "that had just been gathered" and several other food crops had also been grown. The Mormons had passed over "an old corn field" about three miles upstream (Rich 1954:186). George O. Cannon (1954:240) estimated that the field contained about 20 cultivated acres. He noted that where the travelers camped, the Paiutes had made "large ditches" to conduct irrigation water "which gave evidence of industry and perseverance."

About 16 more miles downstream the travelers camped at another "corn field, good feed, some wheat sowed..." (Rich 1954:187; Farrer 1954:207).

Ash Creek. Ash Creek flows into the Virgin River perhaps 20 crow-flight miles upstream east of Santa Clara River. In the summer of 1852, Mormon explorers "found a number of Indians raising grain. Their corn was waist high" on four or five acres under irrigation (Smith and Steele 1852:1). The following summer growing season, Mormons reported one "ole Piede Indian" planting maize under ditch irrigation on upper Ash Creek north of the new LDS colony at Fort Harmony (Wall

1853:3). The year after that, in June of 1854, Band Chief "Tokers" and his people were living 20 miles south of Fort Harmony on lower Ash Creek. "They were grubbing, burning trees, and clearing small patches of land from one to three acres, at the base of the mountains on the eastern side of the river. We saw some corn two feet high...: (Brown 1854:2).

Virgin River. Scholars remain uncertain as to the antiquity of horticulture among the Southern Paiutes. Part of that uncertainty stems from the relative dearth of Spanish-Mexican period explorations in Southern Paiute territory. In other words, there are few documentary eyewitness accounts of Southern Paiute horticulture until mid-nineteenth century. One of the most important eyewitness accounts, therefore, is that of Franciscan Friar Silvestre Velez de Escalante. Descending Ash Creek southward in the fall of 1776, Velez reported finding a "large supply" of ears of green corn and husks placed on a "well made mat," apparently to dry. Nearby, the missionary saw three small maize fields irrigated by water from "very well made irrigation ditches" (Bolton 1950:205).

The exploring party of which Velez de Escalante was co-leader turned eastward upstream at that point, and did not mention horticulture until reaching the Northeastern Pai fields at Moencopi (Bolton 1950:231). Through one or more interpreters, the Franciscan explorer learned that Southern Paiutes living farther down the Virgin River grew not only maize but also squash. They "sustain themselves by planting" wrote Velez, who thought that they called themselves Parussi (Bolton 1950:205). Actually, the Paiute term Velez inferred labeled a social unit is the place name for the Virgin River (Euler 1966:33). Thus, there can be no doubt that Velez recorded maize-squash (and by inference interplanted bean) horticulture on the Virgin River itself in 1776. He heard, however vaguely through not very skilled interpreters, about the core Southern Paiute gardening in the entire Virgin riverine oasis system. The local cultivators who did try to communicate with him at least conveyed the fact that from the confluence of Ash Creek down-river, in the oasis "and on the mesas on either side for a long distance" Southern Paiutes subsisted on horticultural produce.

The same riverine oasis zone continued to be a core Southern Paiute production area until members of the Church of Jesus Christ of Latter Day Saints colonized it. By 1857, Mormons had occupied irrigable Southern Paiute fields not only on the Ash Creek tributary, but also on Santa Clara River and the Virgin River mainstream. The Mormons had established a Virgin River Valley colony they called Washington, and their maize was "doing finely." That "planted by the Indians being about 15 feet high...that belonging to the brethren was not so high" (Martineau 1857:227). Even after Euroamerican seizure of riverine oasis lands began, therefore, Southern Paiute

horticulturists still either were more skillful cultivators and/or had better adapted seed than the invaders.

Colorado River. All along the western bank of the Lower Colorado River, Chemehuevis found sand bars in little bends. There they planted fields irrigated by the annual spring rise of the river (Laird 1976:23). In 1857, a party of LDS missionaries from Las Vegas traveled three days to Mojave territory, evidently at Cottonwood Island. One of them later reported that in the "first" Mojave village "A portion of this village were Pah-ute descent and were our warm friends" (Leavitt n.d.). These riverine Paiutes/Chemehuevis must have been gardening on the island and/or the western bank of the river.

In 1858, Lt. Joseph C. Ives took a small iron steamboat up the river seeking the head of navigation. When Ives steamed north from Chemehuevi to Mojave Valley, he found Chemehuevis growing maize and beans on the intervening bend. He purchased beans and maize (Ives 1861:59-62).

A decade later, a lost prospector floated down the river through Grand Canyon to be pulled out at Callville. At various deltas at the mouths of short northern tributaries of the Colorado River, this prospector met Paiutes. He traded them a pistol for part of a roast dog and remembered their delta maize fields (Stanton 1932). Soon afterwards, John W. Powell led two parties of scientific explorers down river. They also saw and raided Southern Paiute maize-squash fields on the deltas of north-side tributary creeks (Powell 1957:103, 108; Euler 1966:81).

Las Vegas Oasis. After Euroamerican colonization within Southern Paiute desert territory established generally peaceful if not amicable intergroup relations, Southern Paiutes returned to grow crops at spring oases. One of the more important of these gardening oases was that at Las Vegas, where Southern Paiute maize production had been re-established by 1871 (Lyle 1872:89; Lockwood 1872:75). One can but infer that the post-colonization Southern Paiute gardening at Las Vegas oasis constituted a return to aboriginal patterns that had been interdicted by hostile Euroamerican travelers along the Old Spanish Trail.

Cottonwood Spring. The intergroup contact conditions that affected Southern Paiute planting in the Las Vegas oasis also affected the smaller Cottonwood Spring oasis. There, too, Southern Paiutes numbering about 100 had re-established their maize fields by 1871 (Lyle 1872:89; Lockwood 1872:75). There, hostile Euroamerican travelers had for several decades interdicted aboriginal utilization of the irrigation waters and irrigable fields.

Pahrump Valley. Pahrump Valley west of Las Vegas did not lie directly on the Old Spanish Trail. Consequently, the Southern Paiutes may have been able to plant maize there without interruption during the period of hostile Euroamerican travel along the wagon road. At least one army observer considered the local maize-growers of 1871 "very friendly and quite intelligent" (Lyle 1872:84).

Pah Koon Springs. Another group of springs provided Southern Paiutes with irrigation water for arable lands east of the lower Virgin River and south of that stream's westward-flowing course. The Pah Koon Springs are located in the Arizona Strip, the term reportedly meaning "water that boils up" in Paiute (Barnes 1935:314). The nine springs flow into Grand Wash, between the Virgin Mountains and Grand Wash Cliffs. In 1871, the Southern Paiutes reportedly cultivated food crops with these spring waters only when out of pinyon nuts (Lyle 1872:85). It is doubtful whether the Southern Paiutes had neglected the irrigable fields at these springs at any time prior to colonization. After Mormon colonization at St. George to the north, and in Arizona, the Saints opened a wagon road down the canyon to the Colorado River. Evidently travel along this route was infrequent enough to leave Southern Paiutes usually free to utilize the water and arable land resources at and near Pah Koon Springs.

#### CROP INTERPLANTING

Like other Native American horticulturists growing the tropical crop triad, Southern Paiutes interplanted beans and squash with their maize. Bacteria in bean roots fixed atmospheric nitrogen, which thus became available to the root zone of the heavy-feeding maize plants. The stout maize stalks provided the running beans with a climbing post. The Southern Paiutes planted maize, beans, and squash in hills formed with digging sticks, like other New World horticulturists (HDR Sciences 1980:37). In 1854, Mormons (Smith and Steele 1854:2) described the Southern Paiute digging sticks ("sticks, or paddles resembling our axe handles") as the only horticultural and ditch-digging implement. Jedediah Smith had been more explicit in 1826: "For a hoe they use a piece of wood 3 in [inches] Broad and 4 feet Long" (Brooks 1977:60).

Moapa River. Southern Paiutes cultivating irrigated gardens near Old Spanish Trail crossings of the Virgin River watershed streams appear to have planted sufficient beans as well as maize to produce a surplus for sale to passing traders. In 1848, Orville C. Pratt (1954:355) was able to purchase beans as well as green corn from the gardeners on the Moapa River. On the Moapa, Parley P. Pratt (1854) reported "handsome gardens of beans, mellons, corn . . . arranged in

beautiful rows, with little ditches for water between each row . . . .

Santa Clara Creek. When LDS parties traveled from Great Salt Lake to southern California in 1849, diarists recorded Southern Paiute intercropping. James S. Brown (1954:120) reported seeing where "the savages had raised" squash as well as maize a day's travel from Mountain Meadows. Walter Van Dyke (1954:303) noted "along these river bottoms cornstalks and some squash or pumpkins still remaining on the ground, and also indications of irrigation, the work of Indians, of course, as no white people were then in this region . . . ."

In the spring of 1852, a Mormon explorer wrote that he had seen about 100 acres of cultivated land that had been "principally in corn and squashes" (Lee 1852:3). Two years later, another Mormon explorer noted beans growing in Southern Paiute fields on the lower Santa Clara River near the Virgin River (Brown 1854:2).

Beaver Dam Wash. Descending Beaver Dam Wash, Henry W. Bigler (1954:153) reported on November 5, 1849 camping in an Indian maizefield. "We saw . . . beans, . . . and squash vines all in a very good state of cultivation, ditches for eritagion (sic) was made, . . . ." On November 3, Charles C. Rich (1954:185-186) recorded "pumkin seed" at a lodge the inhabitants fled when the Mormons approached, leaving a pot boiling on the fire. Two days later, Rich reported "pumpkins, squash, beans" and other minor crops where the Mormons camped. George Q. Cannon, (1954:240) who estimated 20 acres under cultivation in the "small valley," noted "beans, squash vines, and other vegetables had grown in the field, and had been well cultivated." William Farrer (1954:206) agreed that the beans and squash vines and minor crops were "all in a good state of cultivation, large drains being made for irrigating (sic) shewing industry and perserverance . . . ." A dozen miles downstream, he also reported finding "a number of bitter squash seeds spread out to dry which we thought they had been preparing for food."

Another day's travel downstream, Rich reported that pumpkins had been raised in another maizefield where the Mormons camped to allow their animals to feed on the maize stalks.

Ash Creek. During the summer of 1852, Southern Paiute guides led a party of Mormon explorers from their southern frontier into the Virgin River watershed. On Ash Creek, the explorers saw not only waist-high maize plants in June, but also "squashes, beans" and other minor crops (Smith and Steele 1852:1). Two years later, the band under Chief "Tokers" grew beans, squash and additional food crops on plots of from one to three acres "on the eastern side of the river" (Brown 1854:2).

Colorado River. Jedediah S. Smith recorded in 1826 that one Paiute family raised pumpkins, squashes and beans "on a small spot of alluvial soil on the River band" where Bonelli Ferry Landing would later be established (Brooks 1977:67). The same family was still gardening the spring flood-irrigated field when Smith passed by in 1827 (Sullivan 1934:28).

Las Vegas. When Southern Paiutes reclaimed fields at the Las Vegas oasis, they grew squashes as well as maize and pumpkins (Lyle 1872:89; Lockwood 1872:75). Given the general pattern of Southern Paiute horticulture, there can be little doubt that they or their ancestors had also interplanted these cucurbits with maize before hostile travelers interdicted native cropping in the oasis.

Cottonwood Springs. Much the same situation obtained at Cottonwood Springs. Once Southern Paiutes could safely plant again at this oasis on the main Euroamerican wagon road, they grew pumpkins and squashes (Lyle 1872:89; Lockwood 1872:75), implying that the Southern Paiute gardeners using these oasis fields had grown cucurbits prior to the Euroamerican invasion.

Pahrump Valley. At the Pahrump Valley oasis, where interruption of Southern Paiute horticulture may not have occurred, the native families continued growing squashes and pumpkins into the 1870s (Lyle 1872:89; Lockwood 1872:75). Southern Paiute horticulture at these westerly spring-watered oases testifies to a long-standing pattern of exploitation of arid land resources, as well as post-colonization adjustment to Euroamerican competition for such resources.

#### MINOR CROPS

Ethnographers studied Southern Paiutes after Euroamerican conquest and colonization of tribal territory terminated the pre-contact food economy. The time interval between conquest and colonization and social scientific study appears to have been so long that Southern Paiutes had forgotten several significant minor crops once grown by their ancestors. Pre-colonization Euroamerican accounts identify, however, a number of significant minor food crops grown by Southern Paiutes. Imbued with a very strong ethnocentric sense of their own cultural superiority over mere "Digger" Indians, Euroamerican observers at times reported the presence of plants that were actually cultivars without recognizing that Paiutes transplanted and cared for them.

Gooseberry and Currants. The gooseberry and the currant are good examples of probable Paiute cultivars carefully transplanted and tended that Euroamericans did not recognize as such. Late in June of 1854, a Mormon explorer reported these bushes yielding ripe fruit on the lower Santa Clara River.



"Ripe gooseberries, black, white and red currants were plenty on this stream" (Brown 1854:2). Cultivated gooseberries and currants have, of course, been selected over a long period of time for enlarged fruits. The scant available information about these berry plants in the Virgin River watershed provide no data about fruit size. Nonetheless, it seems very unlikely that such plants could have survived in the hot, arid desert environment without careful irrigation at frequent intervals. There is an ethnographically known Southern Paiute propensity for exchanging plants from different gardens, and transplanting (Stoffle f.n.; Bunte f.n.). Consequently, one can perhaps infer that Paiutes carried gooseberry and currant rooted canes into the Santa Clara River Valley fields from some natural habitat, and then carefully irrigated them in order to enjoy their sweet fruits.

Sunflowers. Euroamericans sometimes did not recognize cultivated sunflowers as food crop plants in Native American fields, inasmuch as the native North American sunflowers are capable of seeding themselves in disturbed soil. Sunflowers are capable of perpetuating themselves on the floodplains of the Virgin River watershed. Both ethnographic information and early Euroamerican travelers' accounts make clear that Southern Paiutes grew a domesticated sunflower in many fields widely scattered through tribal territory.

The Pahrump Paiutes grew sunflowers in their fields at Manse and Pahrump in Pahrump Valley, and Ash Meadows (Steward 1938:183). LDS parties moving from Great Salt Lake Valley to Southern California reported sunflowers growing under irrigation with other domesticated food plants on Beaver Dam Wash (Bigler 1954:153).

Early reference to cultivated sunflowers make clear that Southern Paiutes grew the domesticated type under irrigation. At Willow Springs, Paiutes still grow at least two native sunflower varieties distinguished by Numic names: akump and akumpiruates ("little sunflower"). In addition, a wild sunflower (Helianthus annuus) grows vigorously in disturbed, moist soil in this region. The cultivated sunflowers are simply varieties selected for large seeds and seedheads (Kearney & Peebles 1942:955). The minor differences between varieties make it most difficult to analyze retrospectively the degree to which Southern Paiutes irrigated a cultivar, broadcast seeds of a marginal cultivar in favorable localities, and harvested seeds from wholly wild, unaided plants. What seems clear is that by 1880, the total production of sunflower seeds within Southern Paiute territory had declined disastrously for the Native population. Jacob Hamblin attributed to livestock consumption the disappearance of these plants from "The foothills that yielded hundreds of acres of sunflowers which produced quantities of rich seed" (Stoffle and Evans 1976:187; Fowler and Fowler 1971:22).



Euroamerican observers such as Hamblin (Corbett 1952) who blamed vegetational changes in the semi-arid Southwest on livestock overgrazing were partially correct. They tended not to know, on the other hand, that prior Native American vegetation burning during hunting fire drives encouraged certain food-producing plants such as Helianthus while suppressing others such as tree seedlings. They also tended not to know that Native Americans had deliberately sown seeds of some seed-producing plants.

Morning Glory. In twentieth century commercial irrigated agriculture, morning glory vines have become a significant pest in southern Arizona and California cotton fields. Whether Southern Paiutes faced a parallel problem, or whether they deliberately planted morning glory seeds is not clear. What is clear is that their carefully irrigated and cultivated garden plots did produce morning glories. Several LDS travelers reported the vines in sizeable Southern Paiute fields on Beaver Dam Wash in 1849 (Rich 1954:186; Cannon 1954:240; Farrer 1954:206). The likelihood that these morning glories were weeds seems reduced by comments that the field "had been well cultivated" (Cannon 1954:240) and were "all in a good state of cultivation" (Farrer 1954:206). Morning glory seeds are edible when parched, ground, and cooked into a mush (Phillips 1979:47).

Other. The large irrigated fields in the oasis flood plains of the Virgin River watershed, at least, supported some other minor crops. Charles C. Rich (1954:186) reported seeing "prince's feathers" having been raised in the 20-acre field on Beaver Dam Wash in 1849. According to George Q. Cannon (1954:240), the same field had grown "other vegetables" as well. Rich (1954:286) reported broom corn had been raised in another field on the same stream. Paiutes on Moapa River still grew broom corn in the summer of 1854 (Pratt 1854).

#### TRANSITIONAL CULTIVARS

Southern Paiute horticulturists grew some crops that Euroamericans did not usually recognize as crops during the nineteenth century. These crops were not recognized as such until ethnographic investigation began.

Mentzelia. When ethnobotanical research began, Shoshones living at a number of irrigable locations, including the Goshute along Deep Creek, revealed that they had grown Chenopodium and Mentzelia under irrigation. Individuals joined together in the communal labor of digging irrigation canals and irrigating a large plot where seed was broadcast. Families harvested the oil-rich seed when they were ripe (HDR Sciences 1980:37). Mentzelia is a plant native to the region that can sustain itself on disturbed soil in scattered stands where flood runoff provides more moisture than direct precipitation.

Mentzelia seeds constituted a dietary mainstay for the Northeastern Pai people across the Colorado River south and east of the Southern Paiutes. It was presumably a wild plant there, nearly extirpated by cattle grazing (Kniffen in Kroeber 1935). Walapai oral history identifies numerous areas where Mentzelia, which they called sele', grew in thick, dense stands. Whether the Pai deliberately broadcast Mentzelia seeds or not, their seed beaters spread the seeds, and their fire drives continually opened up favorable habitats for the plants on terrain that received some floodwater runoff that supplemented direct precipitation. Given the conscious cultivation of Mentzelia north among the Goshutes, and the considerable reliance upon Mentzelia south among the Northeastern Pai, the Southern Paiutes must be considered to have grown and harvested Mentzelia seeds.

Chenopods. The distributional evidence for Chenopodium is the same as for Mentzelia. In the Chenopod instance, on the other hand, there is no doubt that the plant was a domesticated one farther south. Chenopodium quinoa was a major pre-Columbian domesticated grain plant grown by the peoples in the Inca Empire, and among other peoples of the South American Andes. Chenopodium was also grown among the Nahuatl speaking peoples of Mesoamerica so that the seeds could be used to fashion statues of particular deities to be consumed during a number of religious festivals. Chenopod cultivation extended north at least to the Northern Piman speaking peoples on the middle Gila River (Dobyns 1974b:44-45). North of Southern Paiute territory, as mentioned above, the Goshute and other Shoshone groups planted and irrigated Chenopods as they did Mentzelia. San Juan Paiutes still use Chenopods, called warai.

Another kind of evidence makes it virtually certain that Southern Paiutes grew domesticated Chenopodium. This is the wheat harvesting technique Mormon missionaries recorded in use by the camp at what later became Washington, Utah, in June of 1854. Two-person teams harvested the grain that had diffused to Southern Paiutes via other Native American groups. One person pried up the roots with a digging stick while another person pulled at the plant. When it came out of the soil, the latter used another stick to beat the earth from about the roots, and put the plants in a shock (Corbett 1952:52). The Southern Paiutes had not seen Euroamericans harvesting wheat by cutting the stalks. Quite probably the ethnic group from which they acquired seed wheat had not learned the sickling technique either.

As a result, Southern Paiutes acquired a valued large-cereal-grain producing plant without knowledge of the best time and technique for harvesting it. They proceeded, therefore, by analogy from a New World cultivar they were already growing and harvesting. There can be little doubt that the cultivar was a Chenopod. For, the Chenopod is the one domesticated plant of all those brought under cultivation in the New World that

requires pulling-digging root and all, and a period of plant-drying seed-maturation before the grain is threshed. To this day, peasants in the central Ande pull-dig their Chenopod plants, carry them to their homes, and stand the often six-foot tall plants against the walls under the eaves where they will stay dry even if it rains, to mature. For whatever reasons of observation and thought, Southern Paiutes applied the Chenopod harvest model to wheat when they acquired seed wheat. The inference that Southern Paiutes grew one or more Chenopods under irrigation in their oases seems inescapable.

Amaranths. Scientists studying pollen evidence of pre-Columbian Native American horticulture and land use typically lump Amaranths with Chenopods as "Cheno-Am" because their pollens are almost impossible to differentiate from one another. The plants prefer the same habitat--flourishing in disturbed soil, especially soil enriched by human excrement and garbage. Like Chenopods, Amaranths were domesticated and grown throughout Andean and Mesoamerica. Southern Paiutes definitely grew domesticated Amaranth. The evidence is unequivocal although scant. The first scientific botanist who visited Southern Paiutes, Edward Palmer (1878:603), collected while among them seed of domesticated Amaranth. His collection is the type collection for domesticated Amaranth in the Southwestern region (Bohrer 1962:107-109; Dobyns 1974b: 43-44).

The fact that Southern Paiutes cultivated domesticated Chenopods and Amaranths throws important light upon their pre-contact horticultural production. These cultivars are still widely grown in the Andean region because they produce high-protein content seeds at altitudes higher than the limits of productivity of other cultivars (Sauer 1949:VI:497). At high elevations where precipitation is greater than at lower ones in the Southwest, Amaranths and Chenopods could also be dry-farmed successfully without irrigation. Almost certainly, therefore, these cultivars contributed significantly to Southern Paiute food budgets at higher elevations. This Chenopod-Amaranth component of the Southern Paiute diet would have mattered most to the easterly and northerly groups. While several of these bands would have found maize-squash-bean cultivation risky to impossible, they could and no doubt did grow Chenopods and Amaranths (Dobyns 1974b:45).

Euroamericans in the New World consistently classify Amaranths and Chenopods as weeds in food-producing field agriculture. This classification has held historically in spite of cultivation of showy Amaranths as ornamentals in house gardens. It has generated a cultural blindness (Dobyns 1976b:125-28) to Native American cultivation of domesticated Amaranths and Chenopods. Consequently, the ethnohistorian must not accept at face value documentary statements that plateau-dwelling Southern Paiutes lacked horticulture. Quite probably at least some if not all of the surplus seeds the Uinkarets sold to Velez de Escalante and his companions in 1776

was Chenopod and Amaranth cultivated production, and not wild plant seeds. Far from being the ever-hungry Diggers of Euroamerican stereotype, Southern Paiutes were in pre-contact times relatively sophisticated high altitude horticulturalists. Their cultivars may have been few in number, but they were eminently well adapted to high altitude environmental conditions and yielded seed high in protein and oil. San Juan Paiutes still cultivate at least one Amaranth (A. retroflexus) they call Kumutu for greens and seeds. It has red leaves.

Mesquite. Two species of Prosopis trees grow in that portion of Southern Paiute territory in the Lower Sonoran vegetational zone. The pith in the pods of both is a nutritious carbohydrate food with a somewhat sweetish flavor. The P. juliflora yields a pod-weight equal to that of any domesticated, irrigated food crop grown on an equivalent surface area and soil quality. The tree is, in other words, a very efficient carbohydrate-maker. The natural habitat of the mesquite tree appears to be the riverine flood plains where its very long tap root reaches the subterranean water table under sand bars and other alluvial fill. Thus, the mesquite tree constituted an important component of riverine oasis vegetation in the core Virgin River watershed. Because alluvium was spottily deposited along the streams, mesquite also grew spottily, rather than in continuous thickets.

Mesquite is discussed in this section because historic documents make clear that it grew in pre-colonization times in several spring oases separated from the riverine habitats by considerable stretches of very arid desert. Human beings faced comparatively little competition for mesquite pods from New World game animals. Once introduced onto Sonoran Desert ranges, Old World cattle and horses have markedly spread mesquite trees by consuming the pods. The hard-shelled seeds pass through the digestive tracts of these domestic animals. Deposited in rich manure, the seeds are given a propitious start when precipitation or ground water provides moisture for germination. That mechanism apparently did not operate prior to colonization, so that people rather than animals carried mesquite seeds to such spring oases as Las Vegas.

The Las Vegas spring oasis is some 28 miles from the nearest portion of the Lower Colorado River (Jensen 1926:138). The adjacent stretch of river was barren of vegetation in mid-nineteenth century. So the mesquite growth at Las Vegas may well have resulted from deliberate pre-Columbian human transport of seeds, and planting them to diversify the food resources of the Las Vegas spring oasis.

The mesquite tree possesses in its long tap root a distinct advantage as a sprig oasis food-producer. As LDS missionaries discovered in 1856, maize seedlings were vulnerable to voracious "worms" that consumed the tender shoots right down to sea level (Jensen 1926:231). Mesquite seedlings

were hardier. Probably more important, once mesquite seedlings grew roots down to the ground water level, they were not killed by the high concentration of mineral salts on the soil surface and in its top layers. Annual crops were vulnerable. Again, Euroamericans attempting to raise domesticated plants at the Las Vegas spring oasis discovered that extensive irrigable tracts were so impregnated with mineral salts that food plants which sprouted died before maturing (Jensen 1926:140). Moreover, mesquite pods were not subject to blackbird depredation like green corn (Jensen 1926:162).

Like other Native American horticulturists in the Rancherian Culture Area, Southern Paiutes were (and still are) careful observers of plant characteristics. Astute gardeners would have recognized in pre-Columbian times the superiority of mesquite over maize-beans-squash and other annual plants as an edible food-producer in spring oases. The springs which created such oases typically carried a large load of dissolved minerals that crystallized into salts when the water evaporated on or near the surface of soils moistened by it.

Grapes. Native Americans clearly did not cultivate grape vines in the manner of Northwestern Europeans, who carefully tended varieties that yielded sugar-rich fruits from which wine could be made. On the other hand, there is good reason to suspect that European and later Euroamerican observers considered wild at least some grape vines that had been planted by Native Americans. Such is the case with at least some of the grape vines early Euroamerican explorers saw in major horticultural oases of Southern Paiutes.

Pahrump Valley is one oasis where the Southern Paiutes "gather large quantities of wild grapes, which grow abundantly near the springs" (Lyle 1872:89). The oasis in this valley is so remote from other habitats of the grape vine that human transport of the original grape seeds there seems as or more likely than bird or other non-human transport. A similar small spring-flow oasis supported about an acre "completely interlocked with vines" in 1852 about five miles north of the Virgin River near Ash Creek (Lee 1852:3). Riverine oasis cultivation of grapes is indicated in Chief Toquer's warning Mormon missionaries who visited him late in May of 1854 to keep their horses off "his grape vines." He had five or six bunches (Brooks 1972:44).

Ironwood. Ironwood seeds would have provided emergency rations at best. Felling ironwood trees with fire would have been laborious, although the wood is hard and durable. Nonetheless, Southern Paiute oral history records planting ironwood seed. A small valley some three miles north of Topock on the Colorado River contains ironwood trees that grew from seeds brought there by Chemehuevis (Laird 1976:124).

## OLD WORLD CROPS

Southern Paiute horticulture was a dynamic, expanding component of the tribal food economy during historic times. Southern Paiute traders were linked into the Rancherian Culture Area intertribal trade network, and acquired from their trading partners seeds of Old World food crops that Spaniards had brought to the New World. These crops new to the Southern Paiutes significantly augmented the cultivated food supply.

Wheat. Wheat may have diffused from the frontier of colonial New Spain either from the Rio Grande Pueblos via the Oraibi trading center, or from Northern Pimans via the Gila River trading center, the Panya trading center on the lower Colorado River, and the Northeastern Pai. If wheat spread along the westerly route, it must have reached the Northeastern Pai prior to 1827, when Mojave tribal armies drove the Northern Panya off the Colorado River (Dobyns, Ezell, Jones and Ezell 1957:46ff). In fact, Jedediah S. Smith recorded in the summer of 1826 that a Paiute "showed me where he had wheat sown or rather planted in hills of 20 or 30 grains in the hill" on alluvium on the bank of the Colorado River where Bonelli Ferry later landed (Brooks 1977:67). Thus, documentary evidence shows that wheat seed had diffused to the Southern Paiute by 1826, but not the European cultural trait of broadcasting it. The great importance of wheat to the Southern Paiute food economy lay in its resistance to cold: wheat could be grown during the winter in the irrigated fields in the Virgin River watershed. Thus, wheat enabled the Southern Paiute horticulturalists to double-crop their fields, and approximately double their cereal grain production on a fixed field area base.

On Beaver Dam Wash in early November of 1849, LDS travelers headed for southern California recorded "we saw some wheat straw lying about" (Bigler 1954:153). On November 7, Charles C. Rich (1954:186) noted "some wheat sowed" near a maize field in which his party camped to allow stock to graze on maize stalks and other crop remains.

On Santa Clara River just above the Virgin River, "were five acres of good wheat, all headed, and some of it ripe" in mid-June of 1854. Maize and beans grew in other fields (Brown 1854:2).

On the Moapa River, Rich (1954:189) "found wheat growing finely, plenty of warm springs making a fine creek" on November 17. By the end of May in 1854: "We saw about 40 acres of wheat mostly in one body. Much of it was ripe, and some of it was cut and stood in shocks; it was as high as my shoulders, and some of it measured to my nose (Pratt 1854).

On Ash Creek, late in June of 1852, the local Paiutes had maize waist high, when "their wheat had got ripe, and was cut" (Smith and Steele 1852:1).

On the Colorado River, apparently at or near the mouth of Las Vegas Wash, a local group of some 50 Southern Paiutes had already harvested "a little wheat on a sandbank" in June of 1855 (Jensen 1926:140).

In mid-1854, Jacob Hamblin and other missionaries on a trip from Harmony south into still uncolonized Virgin River oases saw wheat being harvested where Mormons later established Washington. The technological result of diffusion of wheat seed through successive Native American ethnic groups appeared in the harvesting procedure.

Potato. Southern Paiutes dug up a wild potato in pre-contact times. Consequently, they were already familiar with this tuber in a small, uncultivated form when the domesticated Andean potato diffused to them from Euroamericans. They were growing potatoes under irrigation on Ash Creek by the summer of 1852 (Smith and Steele 1852:1). Chief "Tokers" band was still growing potatoes on Ash Creek in the summer of 1854 (Brown 1854:2). Southern Paiutes may have acquired seed potatoes from Mormons or Pahvant Utes who obtained their start from Mormons farther north only on the eve of Euroamerican colonization.

Watermelon. Another Old World domesticated plant, the watermelon, spread from the Spanish colonial frontier to Southern Paiute gardeners via intervening Native American populations. When Jedediah S. Smith explored Southern Paiute country in 1826, he recorded seeing green "Water Melons" where he purchased squash and pumpkins already edible (Brooks 1977:63). In 1854, Mormons exploring Ash Creek saw the people led by Chief Tokers growing watermelons along with several other crops (Brown 1854:2). That same year, other Mormons recorded "mellons" growing in Southern Paiute fields on Moapa River (P. Pratt 1854). Thus, Southern Paiute gardeners demonstrated their technical competence and adaptability by adopting several Old World domesticated plants that required three different field treatments: a small grain, a tuber, and a vining melon.

#### FIBER CROPS

Southern Paiute horticulturists grew not only a considerable variety of food crops, but also a few textile or organic fiber plants (see TABLE 6). Cotton, a major export crop among the Northern Panya on the lower Colorado River (Ives 1939), appears never to have spread to even the Chemehuevi vanguard of Southern Paiutes. On the other hand, Southern Paiute gardeners in riverine and spring-flow oases deliberately planted at least one fiber-producing plant, and tolerated or encouraged at least two others.



Devil's Claw. Like several other ethnic groups in the Rancherian Culture Area, Southern Paiutes utilized a black vegetable fiber to contrast with a light one in aesthetic designs on coiled baskets. Women obtained the black fiber from the outer coat of the seed pod of Devil's Claw. This plant, Proboscidium parviflora, was domesticated within the Rancherian culture area by Native Americans. It has been grown in recent times at Moccasin Spring, Santa Clara River and Moapa River (Nabhan et. al. 1981:136 Fig. 1). Wild pods also yield useable fibers, but they are appreciably shorter than those of the cultivar.

Willow. The light colored element in coiled baskets comes from splints of desert willows. That Southern Paiutes have at least two terms for different willows (Laird 1976:106) reflects gardener interest in these phreatophytes. Willows are easily propagated from cuttings, and Southern Paiute basketmakers who lacked a handy supply of willow splints no doubt started new willow thickets from time to time in spring-flow oases. They may also have started willow cuttings in other environmental settings. In riverine oases, willows are quite capable of spreading themselves, so an abundant supply of wild plants was available there. (Note basket quality willows require regular cutting.)

Milkweed. Observations of Mormon explorers of the Virgin River watershed during the early 1850s make clear that milkweed was an abundant plant in the flood plain vegetative assembly (P. Pratt 1854; Martineau 1857:3). The various native species of Asclepias could reproduce themselves without human assistance. Yet, the reported near dominance of milkweed plants in the riverine oasis vegetation suggests that Southern Paiutes may have deliberately planted seed there. Certainly, they at least tolerated milkweed plants, allowing natural river irrigation of milkweed stands, if they did not actually artificially irrigate them in the very arid Virgin River Valley environment. Utes fashioned a great deal of cordage from milkweed fibers. Mormon colonists in Southern Paiute territory learned to extract and utilize milkweed fibers among Utes, or among Southern Paiutes. Some of the initial Mormon attempts to utilize cotton grown in Utah's Dixie, mixed silk-like milkweed fibers with the scarce cotton fibers (Martineau 1857:227). Thus, indirect evidence as well as distributional evidence points to Southern Paiute toleration of, apparent encouragement of, and possible conscious cultivation of milkweed plants.

Summary. Southern Paiute gardeners demonstrated their adaptability by cultivating three Old World domesticated plants and one New World domesticate obtained via colonial European sources, before Euroamericans colonized their territory. Those additions brought the total number of cultivars in Southern Paiute horticulture to about 17 plants, of which half a dozen were certainly fully domesticated. Other evidence of technological ingenuity by Southern Paiute gardeners was seen in the increase in economic plant density in riverine and spring-fed oases.



TABLE 2. MAJOR FOOD PLANTS CULTIVATED BY SOUTHERN PAIUTES

BOTANICAL NAME	NUMIC NAME	ENGLISH NAME	PART EATEN
1. <u>Zea mays</u>	(Kumi)*	Maize corn	seed grain
2. <u>Cucurbit spp.</u>	(parangwara)	Pumpkin squash	fruit, seed
3. <u>Phaseolus acutifolis</u>	(Muurii)	Tepary bean	green pod, dried seed

## NOTES: Eyewitness reports

- 1776 = Bolton 1950:212; 1826 = Brooks 1977:59; 1829 = Armijo 1954:163; 1848 = Pratt 1954:355; 1849 = Brown 1954:120; Rich 1954:185-86; 1858 = Lee 1852:3; Ives 1861:61; DESERET NEWS 1862:108.
- 1776 = Bolton 1950:209; 1826 = Brooks 1977:57, 60; 1829 = Armijo 1954:163; 1849 = Brown 1954:120; Rich 1954:185; Cannon 1954:240; Farrer 1954:206; Lee 1852:3.
- 1848 = Pratt 1954:355; 1849 = Cannon 1854:240; Farrer 1954:206; A. Pratt 1954:89; Rich 1954:186; 1858 = Ives 1861:61; ethnographic present = Steward 1938:183.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 3. MINOR FOOD PLANTS CULTIVATED BY SOUTHERN PAIUTES

BOTANICAL NAME	NUMIC NAME	ENGLISH NAME	PART EATEN
ANNUALS			
4. <u>Helianthus annuus</u>	(akampi)* akamp, or akumpiruates	Sunflower	seed
5. <u>Ipomoea</u> spp.		Morning Glory	tuber
PERENNIALS			
6. <u>Ribes inerme</u>		Whitestem Gooseberry	fruit
7. <u>Ribes aureum</u>	(poxompe)	Golden (red, black) Currant	fruit

## NOTES: Eyewitness Reports and Botanical Analyses

4. 1849 = Bigler 1954:153; Steward 1938:183; Train et al 1941:16; Kearney and Peebles 1942:955.
5. 1849 = Cannon 1954:240; Farrer 1954:206; Rich 1954:186; Kearney and Peebles 1942:708-711 (I. plummarae tuber is edible)
6. Brown 1854:2 at elevation where irrigation would be required; Kearney and Peebles 1942:385-386.
7. Brown 1954:2 = black, white & red fruits; Kearney and Peebles 1942:384, 386; Train et al 1941:129.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 4. TRANSITIONAL CULTIVARS PLANTED INTENTIONALLY BY SOUTHERN PAIUTES  
THAT RETAINED THE CAPACITY TO SEED THEMSELVES

BOTANICAL NAME	NUMIC NAME	ENGLISH NAME	PART EATEN
8. <u>Chenopodium</u> spp.	warai	Goosefoot, or Lamb's Quarters	cereal seed green leaves
9. <u>Amaranthus</u> <u>palmeri</u>	kumut*	Pigweed Quelite (Spanish)	cereal seed green leaves
10. <u>Mentzelia</u> <u>pumila</u> <u>M. albicualis</u>	(ku'u)*	blazing Star	cereal seed
PERENNIAL VINE			
11. <u>Vitis</u> <u>arizonica</u>	Avatu Kuxuwanup	Grape	fruit
12. <u>Prosopis</u> <u>juliflora</u>	('op) ('opimp*)	Mesquite seed Mesquite tree	pod pith seed
13. <u>Prosopis</u> <u>odorata</u>	Kwiyar*	Screwbean	pod pith
14. <u>Olneya</u> <u>tesota</u>		Ironwood	seed in emergencies

8. HDR Sciences 1980:33; Dobyns 1974b:44-45; P. A. Bunte field notes.
9. Bolton 1950:208-09; Palmer 1878:603.
10. HDR Sciences 1980:33; Kearney and Peebles 1942:590-93.
11. Lyle 1872:89; Kearney and Peebles 1942:560.
12. Kearney and Peebles 1942:420; Smoot 1855:198.
13. Kearney and Peebles 1942:420-21; Smoot 1855:198.
14. Laird 1976:124; Kearney and Peebles 1942:466.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 5. OLD WORLD FOOD CROPS SOUTHERN PAIUTES ADOPTED PRIOR TO  
EUROAMERICAN COLONIZATION IN THEIR ANCESTRAL TERRITORY

BOTANICAL NAME	NUMIC NAME	ENGLISH NAME	PART EATEN
15. <u>Triticum</u> <u>sativum</u>		Wheat	seed grain
16. <u>Solanum</u> <u>tuberosum</u> *•	(Tarasi)*	Potato	tuber
17. <u>Citrullus</u> <u>ulgaris</u>		Watermelon	fruit
18. <u>Phaseolus</u> sp.	kakaramurih (kakaramuuri)	Black-eyed Pea	seed & pod, green dried seed

NOTES: Eyewitness or Ethnographic Reports and Botanical Analyses

15. 1849 = Brown 1954:120; A. Pratt 1954:89; Smith and Steele 1852:1; P. Pratt 1854; Corbett 1952:52.  
16. Smith and Steele 1852:1; Brown 1854:2; Kearney and Peebles 1942:786.  
17. 1826 = Brooks 1977:63; Brown 1854:2; P. Pratt 1854.  
18. Laird 1976:24.

\*\* The potato actually was domesticated in the Andean area of the New World. It is here classed with Old World cultivars that diffused to Southern Paiutes from Spanish colonial frontier provinces.

- Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 6. SOUTHERN PAIUTE FIBER PLANTS DELIBERATELY PLANTED AND/OR  
IRRIGATED AND TOLERATED

BOTANICAL NAME	NUMIC NAME	ENGLISH NAME	PART USED
19. <u>Proboscidium</u> <u>parviflora</u>	(tuusavi)*	Devil's Claw, or Unicorn plant	seed pod skin (black)
20. <u>Salix</u> <u>gooddingii</u> <u>S. Lutea</u> etc.	kanavi and sagah	Willow	shoots, splints
21. <u>Asclepias</u> <u>speciosa</u> etc.		Milkweed	fibers from bark

19. Nabhan et. al. 1981:136 Fig. 1, 139 Table 2; Stewart 1942:340;  
Kearney and Peebles 1942:835; Stoffle and Evans 1976:4.

20. P. Pratt 1854; Desert News 2 April 1853:2 (Ute); Kearney and  
Peebles 1942:218-220.

21. P. Pratt 1854; Desert News 2 April 1853:2 (Ute); Martineau  
1857:3; Kearney and Peebles 1942:689-94; Train et al 1941:48.

\* Southern Paiute name in parentheses provided by Dr. Pamela Bunte.

It seems fairly certain that the ethnobotanical knowledge and action of Southern Paiutes did not end with the plants listed above. Like other Native American peoples residing in the Sonoran Desert, they probably from time to time expanded the supply of plants that cannot be considered by any means modified. Pads of Opuntias broken from a larger cactus and laid on the ground if stuck into the soil readily root and grow. Thus, it is relatively easy to select plants for size and sugar content of the fruit, and create enlarged stands of preferred Opuntias. Such vegetative reproduction does not modify the genetic characteristics of the plant stock, but human intervention does significantly affect plant density and the chances of survival of large-fruited, sugary varieties reproducing from seeds.

Southern Paiute utilization of fire to burn off dead biomass, particularly of grasses, stimulated fresh growth and efficient seeding. Fires also suppressed seedlings of trees such as mesquite in areas where Southern Paiutes did not want them. Conversely, the known expansion of the range of Ironwood by members of this ethnic group suggests that in earlier times, they may well have also expanded the natural range of both types of Mesquite, and very likely pinyon trees as well. Southern Paiute exploitation of plant resources ranged along a continuum, in other words, from harvesting what nature provided to growing a plant (maize) which had lost the ability to reproduce itself. Southern Paiutes engaged in all degrees of cultivation between those extremes. Consequently, the vegetational landscape of their Holy Land in 1825 resulted from centuries of human influence. Contemporary Southern Paiutes retain in large measure their traditional interest in, concern for and skill with plants.

#### THE PAIUTE PRECONTACT FISHING ECONOMY

Lakes, flowing rivers, creeks and springs furnished the Southern Paiutes not only invaluable irrigation water, but also an abundant supply of fish. Paiute fishing technology apparently is not well understood. Southern Paiutes probably caught fish with hook and line, with baskets and nets, and by building weirs and diversion dams. Such devices enabled them to obtain large amounts of animal protein. They dried and stored fish caught during spawning runs. They fished through the winter (HDR Sciences 1980:36).

The fish available in the Colorado River attracted Southern Paiutes to the banks of that stream from Glen Canyon westward through Grand Canyon and around the great bend to Cottonwood Island, and the Mojave and Chemehuevi Valleys. Fish in the Virgin River watershed streams made the ribbon oases along them probably the major resource base in tribal territory. To illustrate the resource, in mid-November of

1849, Addison Pratt (1954:88) found that "They bite readily at a hook, the largest of them weighing near a pound."

To the north, the Sevier River and marshes, Panguitch Lake in its headwaters, Little Salt Lake and tributaries of the Colorado River north of Glen Canyon also provided fish stocks the Southern Paiutes exploited. The Southern Paiute fishermen caught a surplus for trade at least at favorable locations. For example, a party of Mormons crossed the ridge from Parowan to Panguitch Lake in the summer of 1852. There a band under a chief known as Awawnnap or Ouionararah greeted the LDS explorers "with the greatest feelings of kindness. The next day we traded with them for their fish, giving them flour and bread; but they wanted us to trade them powder, which we refused" (Smith and Steele 1852:1).

There can be little doubt that fish provided the animal protein mainstay of the Southern Paiute diet from day to day. None lacked access to fishing waters, although length of residence beside lakes and rivers varied. Thus, the combination of garden produce grown under irrigation with fish from the streams and cottontail rabbits, quail and other riverine oasis game made the oases the core of Paiute habitation. The combination of cultivated carbohydrate crops (maize, wheat and beans) with vegetables (squash, pumpkins, Amaranth and Chenopod leaves) with animal protein from fish, rabbits, quail and waterfowl, made village style sedentary settlement feasible.

#### THE PAIUTE PRECONTACT HUNTING ECONOMY

The Southern Paiute habitat, diversified in terms of land forms and altitudes, furnished an assortment of big and small game animals and birds. The Paiutes appear to have exploited all of the available sources of animal protein, including insects such as locusts and grasshoppers, caterpillars and ants that constituted a threat to their cultivated crops along with rats, prairie dogs, gophers, squirrels and cottontail rabbits that also ate cultivars. All of these types of game concentrated in the riverine oases where Southern Paiute settlement was densest, and flourished on the alluvial flood plain vegetation. It was thus no accident that the first Southern Paiute whom Jedediah S. Smith contacted near the confluence of Santa Clara River and the Virgin River in 1826 approached with "a hare or rabbit to offer as a token of friendship" (Brooks 1977:58).

Migratory waterfowl also landed on oasis waters. Swans, geese, ducks and mudhens on the Western Flyway stopped on the oases, and Southern Paiutes hunted them (HDR Sciences

1980:36). For example, Addison Pratt "was out in pursuit of some ducks that frequented a pool" on the Moapa in mid-November 1849 (Pratt 1954:88).

The riverine oases also provided flocks of Gambel's Quail, as on the Virgin (Brooks 1977:63) and Santa Clara Rivers (Pratt 1954:81). Like cottontail rabbits and squirrels, quail abounded in the riverine oases because they must drink water regularly and in considerable amounts. These upland game birds and animals cannot survive in truly arid habitats.

## BIG GAME

Sources of drinking water also regulated the distribution of big game animals in the Southern Paiute habitat. Many big game animals ventured to the major streams to drink, thus making themselves vulnerable to Paiute arrows in the oases.

Mountain Sheep. One big game animal that appears to have come into the riverine oases to drink, while ranging nearby mountain slopes, was the mountain sheep. Crossing the barren mountains from the Santa Clara - Virgin River valley to the Beaver Dam Wash-Moapa River valley in 1826, Jedediah S. Smith and one of his men each killed an "Ibex" (Brooks 1977:62). These animals abounded on the slopes of Grand Canyon, and may have grazed in large herds on open, grassy foothill areas (HDR Sciences 1980:34). They reportedly averaged 135 kg.

Antelope. The great speed and mobility of the pronghorn antelope enables these animals to range out over the open valleys and back to mountain springs. Presumably antelope did not range through the Covillea vegetative zone in southern Nevada (HDR Sciences 1980:36). The semi-sedentary Southern Paiutes at the heart of the Virgin River watershed on Santa Clara River obtained antelope meat, for J. S. Smith found many of them wearing antelope scalp hats in 1826 (Brooks 1977:609). Smith's party, traveling south from Great Salt Lake, had not killed an antelope since leaving Beaver River north of the Parowan Valley (Brooks 1977:53). At that time, this region lay within Southern Paiute territory (Brooks 1977:49).

Deer. Both the Virginia Whitetail and Desert Mule deer ranged over the mountains in Southern Paiute territory, particularly those ranges that supported a chaparral type vegetation. They lived in small herds, so Paiute hunters could both stalk deer, and form hunting groups to drive deer into an ambush, especially when deer moved between high and low altitude ranges in spring and fall (HDR Sciences 1980:34).



## SMALL GAME

While most small game animals and birds congregated in the riverine oases where Southern Paiute semi-sedentary hunters could find them close at hand, the Black-tailed Jackrabbit ranged over the valleys much like the antelope. The mature animal weighs 2.5 kg., and its high reproduction rate insured a constant supply of game. Southern Paiutes could capture large numbers by organizing large-scale communal hunts (HDR Sciences 1980:36). In 1826, Jedediah S. Smith first noticed the Black-tailed Jackrabbit along the upper Sevier River (Brooks 1977:50).

## BURNING

In 1855, Mormon colonists were dismayed by the traditional Southern Paiute fire-management of oasis and upland vegetation. "The Indians here seem to be possessed with the spirit of burning, for there is scarcely a day but what we can see fires both on the mountains and in the valleys." The colonists undertook to dissuade the natives from continuing their time-tested technology.

"We have talked to them about burning up the grass, and they seem willing to spare it, and do set their fires among the sage brush, but it often gets into the grass, and they have already burned much of it, but they try to clear themselves by saying that it will be very good when the rains come in the fall" (Atwood 1855:224).

The Paiutes were correct. Frequent burns suppressed tree growth, removed dead biomass, stimulated grass sprouting and forb seed germination (Lewis 1973), all of which fostered upland game bird and animal reproduction and growth.

## THE SOUTHERN PAIUTE PRECONTACT COLLECTING ECONOMY

Besides cultivating crop plants under irrigation, fishing, and hunting, Southern Paiutes collected wild plant foods in season. Most seeds they harvested are listed in TABLE 7; berries in TABLE 8; roots in TABLE 9; fruits picked in TABLE 10; nuts and blossoms gathered in TABLE 11; and plants and parts eaten in TABLE 12. The close native observation of plants, and the aforementioned propensity for planting seeds of desirable plants such as grapes and mesquites in well-watered oases make the distinction between fully domesticated and fully wild plants difficult. At least some of the plants Southern Paiutes deliberately propagated have already been identified.

No doubt others were consciously transplanted or planted in new locations in pre-contact periods beyond the reach of oral tradition. Planting seed and transplanting vegetatively reproducing plants are Southern Paiute cultural traits that probably have their origins in remote antiquity.

It is quite possible, therefore, and even likely, that Southern Paiutes created new stands of economically desirable species and encouraged increased density of desired species. As previously discussed, stands of pinyon trees may well reflect Southern Paiute planting of nuts as well as distribution by birds, squirrels, and the parent trees. Stands of large-fruited Opuntia cacti, at least where they stood at the beginning of Euroamerican colonization, also probably attested to Southern Paiute transplanting of pads.

Southern Paiutes received misleading publicity from John C. Fremont and various mountain men--although not from that dispassionate observer Jedediah S. Smith. This "digger" stereotype carried over into the early anthropological/ethnological literature about Southern Paiutes. Consequently, a common stereotype of Southern Paiutes is that they were nomads, wandering randomly from food source to food source. What has already been stated in this report should indicate that the Southern Paiutes were far from nomadic; they were in fact sedentary or at least semi-sedentary. They lived much and perhaps most of the year in fixed villages in riverine or spring watered oases where they cultivated food plants. Hunters ranged out from those villages to seek game in the ribbon-shaped riverine oases, and in the mountain ranges.

Family groups ventured away from the sedentary settlements to uplands where grass seed or forb seeds ripened in season. For example, they traveled up into the mountains to collect pinyon nuts during late August at the latitude of Pioche (Pioche Daily Record 22 Aug. 1875; 1 Sept. 1875) when the cones were in the proper state for harvesting. They knew perfectly well where every wild/planted food resource was located within their territory. They traveled directly to and from each food source on well-known and well-marked foot-trails.

Perhaps the surest clue to Southern Paiute semi-sedentarism is the systematic processing, drying and storing of a wide variety of foodstuffs. The tendency of Euroamericans in Southern Paiute territory to interpret pinyon nut collecting as evidence of nomadism is puzzling, for the pinyon nut is not accessible until the cones containing the nuts are heated so they expand and release the nuts. The latter keep when roasted, and constitute an excellent and storable high-energy oil source. Moreover, Pueblo Indians also traveled out from their sedentary settlements in the pinyon nut harvest season. They collected these nuts, roasted them, and carried them back to their Pueblos to be stored for future consumption. Yet Euroamericans consistently viewed Pueblo

peoples as sedentary because they lived in substantial houses, and never viewed them as nomads because they gathered pinyon nuts.

When Jedediah S. Smith traversed Southern Paiute territory in 1826, he noted people industriously digging up a root to pit roast, pound, sun dry, and store (Brooks 1977:49). He recorded provident behavior by semi-sedentary natives. Yet that providence earned Southern Paiutes the denigrating label "Diggers." Euroamerican perception of Southern Paiutes was selectively negative, to say the least.

## TRADE

One of the apparently significant mechanisms for the even distribution among Southern Paiutes of food resources irregularly distributed in nature was trade. Moreover, pre-colonization trade was international as well as intra-tribal in scope. One of the most telling physical indices of the extent of intertribal exchange in which Southern Paiutes engaged is the variety of ceramic vessels they acquired from neighboring peoples. This variety was graphically recorded in 1826 by Jedediah S. Smith. On the lower Santa Clara River: They have some Crockery which is thinner than common Brown earthen colored yellow lead Color and like stone ware" (Brooks 1977:60). Smith's cryptic sentence described a surprising variety of vessels.

The lead colored vessels may be identified readily as local Southern Paiute products. Those that reminded Smith of Euroamerican stone ware may also have been locally made pots (Dobyns 1974a:1:71; Baldwin 1950:52-53).

The brown pots were, however, evidently Tizon Brown Ware, obtained in trade with the Northeastern Pai across the Colorado River frontier to the south (Dobyns 1974a:II:147).

The earth colored vessels were most probably Lower Colorado River Buffware. That was the characteristic ceramic ware of the Mojaves (Dobyns 1974a:II:72-73; Schroeder 1952:20), some of whom Smith saw trading with the Paiutes.

There can be no ambiguity as to the identity of the yellow vessels. They were Polacca Polychrome made by Hopi potters between 1781 and 1860, or undecorated plain Hopi Yellowware (Wade and McChesney 1980:57-66) in the same style.

The Northeastern Pai made no great quantity of ceramic vessels. It is surprising, therefore, to find Smith's reference to brown pots among Southern Paiute oasis

horticulturists. Yet the Southern Paiute are known to have traded with the Pai (Dobyns and Euler 1980a:89).

The presence of Hopi pots is, on the other hand, not very surprising. The traders living in the great Oraibi Pueblo trading center at the western gateway to the large Pueblo market area traveled long distances westward. Southern Paiute traders traveled to Oraibi Pueblo as late as 1860 (Euler 1966:71; Brooks 1977:80; 93-5), like Northeastern Pai traders south of the Colorado River. Seeking blankets and provisions--probably carried in ceramic vessels--the Southern Paiute traders very likely furnished Oraibi trading partners with cakes of dried mescal (Agave pulp) as did the Pai entrepreneurs.

Smith's ability to observe a variety of ceramic vessels in a Southern Paiute riverine oasis settlement suggests that they were in use as cooking, food-processing and/or storage vessels. In other words, Southern Paiute traders were not likely to have carried home empty pots. The etiquette of intertribal exchange of commodities almost certainly required those pots to have left Hopi and Pai hands full of horticultural foods. Southern Paiute traders imported, in other words, some quantity of cultivated food grown by members of neighboring tribes. Yet, Southern Paiute trade has been largely ignored by recent scholars.

Agave. The variety of ceramic vessels Smith saw among Southern Paiutes indicates quite clearly that Southern Paiutes must have exported some commodities in exchange for their imports. When outsiders entered Southern Paiute territory, as Velez de Escalante did in 1776, the Kaiparowits, at least, offered mountain sheep meat, dried tuna (Opuntia cactus), fruit cakes, and pinyon nuts for exchange (Bolton 1950:211). The probable ancestors of the people among whom Smith saw many pots offered strung turquoise and shell (Bolton 1950:207).

By the nineteenth century, the Hopi had exterminated Agave within safe and convenient travel distance around their pueblos. They consequently readily exchanged their pots, textiles, and even European goods for dried roasted Agave pulp that Pai entrepreneurs carried to the Oraibi. It is quite probable that Southern Paiute traders and their wives engaged in the same labor-intensive exploitation of the Agave resource. Large Agave species flourished on the benches of Grand Canyon, to which several Southern Paiute bands had access. The mature plants were so large that cutting, trimming and roasting them was relatively efficient in terms of bulk of sugary pulp produced per day's labor. The hot, arid climate within the canyon also provided ideal drying conditions for turning out the portable export cakes of pulp.

Rock Salt. Another commodity that Southern Paiutes possessed in great abundance was salt. Those living on the

TABLE 7. PLANT SEEDS GATHERED BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. <u>Agropyron</u> <u>smithii</u>	Paxankwa	Wheat grass	grind
2. <u>Agrostis</u> <u>exarata</u>		Spike Bentgrass	grind
3. <u>Allenrolfea</u>	Tub-bo-weets	Iodine-bush	grind
4. <u>Amaranthus</u> <u>albus</u>	Toki-mont	Amaranth	various
forms <u>hypochondriacus</u>	Ku-mont		
<u>leucarpus</u>	Camoot		
<u>powellii</u>	(Kumut*) *	Powell's	
<u>retroflexus</u>		Amaranth	
5. <u>Ammannia</u> <u>coccinea</u>			grind
6. <u>Artemisia</u> <u>dracunculoides</u> <u>ludoviciana</u>	(Sangwa)	Sagebrush	grind
7. <u>Atriplex</u> <u>powellii</u>	"Oue-ahe-que"	Powell's saltbush	grind
<u>canescens</u>			
<u>confertifolia</u>			
<u>lentiformis</u>			
8. <u>Curcubita</u> <u>foetidissima</u>		Wild gourd	grind
9. <u>Descurainia</u> <u>pinnata</u> <u>halictorum</u>	(aka) Hahck Ok Ak	Tansymustard	grind
10. <u>Elymus</u> <u>glaucus</u> <u>triticoideis</u> <u>canadensis</u>		Wild ryegrass	grind
11. <u>Echinochloa</u> <u>muricata</u>		Cockspur	grind,
parch <u>microstachya</u>			
12. <u>Eragrostis</u> sp.		Love grass	grind

13.	<u>Fagopyrum</u> <u>sagittatum</u>		Buckwheat	grind
14.	<u>Lepidium</u> <u>fremontii</u> <u>lasiocarpum</u>		Fremont's peppergrass	grind
15.	<u>Mulenbergia</u> sp.	(nuavi)	Muhly	parched
16.	<u>Oryzopsis</u> <u>hymenoides</u>	Wa'ai	Rice Grass	grind
17.	<u>Panicum</u> sp.		Panicum	grind
18.	<u>Portulaca</u> <u>retusa</u>	To-puene	Purslane	grind
19.	<u>Poa bigelovii</u> <u>longiligula</u>		Bluegrass	grind
20.	<u>Sarcobatus</u> <u>vermiculatus</u>		Greasewood	grind
21.	<u>Scirpus</u> <u>paludosus</u>		Bullrush	grind
22.	<u>Sporubulus</u> sp.	Pas-tu-shu-kunt (Kwakwai)	Dropseed	grind, mix with others
23.	<u>Sueda diffusa</u>	Ahrr Aah-ap-weep Sah-ap-weep	Seepweed	grind
24.	<u>Viguiera</u> <u>multiflora</u>			grind
25.	<u>Yucca</u> <u>brevifolia</u>		Joshua tree	raw, grind

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HDR Sciences 1980:33; Kearney and Peebles 1942:91-2, 100-01; 103;211; Bye 1972:90-95, 97-8, Kelly 1964:153,179.

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\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 8. BERRIES GATHERED BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. <u>Amelanchier</u> <u>utahensis</u> <u>alnifolia</u>	(Tavwampe)• Toyaba Toyabe	Serviceberry	fresh
2. <u>Berberis</u> <u>fremontii</u>	(Tonip)	Fremont's Barberry	fresh
3. <u>Fragaria</u> sp.	(təvi'isi)	Strawberry	fresh
4. <u>Juniperus</u> <u>osteosperma</u>	Noo-ahn-tup (wa'apə) (wa'apəmpi)	Juniper/Cedar	roast
5. <u>Lycium</u> <u>pallidum</u> <u>andersoni</u> <u>berlandieri</u>	U'upi	Squawberry	fresh
6. <u>Rhus trilobata</u>	Hu?upi (i'isi) (sə'əvimpe)	Squawberry	fresh
7. <u>Rosa</u> sp.	(sə'impipi)	Rose bush	fresh
8. <u>Rubus</u> <u>neomexicanus</u>	(nagauvwanatəmpipi)	Raspberry	fresh
9. <u>Sambucus</u> <u>racemosa</u>	(Kunukwi)	Elderberry	fresh
10. <u>Shepherdia</u> <u>rotundifolia</u> <u>argenta</u>	(Pa'upi) Paxomp	Buffaloberry	fresh
11. <u>Smilacina</u> <u>racemosa</u>		False Solomonseal (Coyote berry)	fresh
12. <u>Vaccinium</u> <u>oreophilum</u>	(Kainap)	Blueberry	fresh

HDR Sciences 1980:34; Laird 1976:109; Kearney and Peebles 1942:200, 393, 395, 617, 664, 853-54; Corbett 1952:52; Bye 1972:98; Burton 1861:478-79; Kelly 1964:43, 46, 153, 180.

- Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 9. ROOTS AND BULBS DUG BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. <u>Allium</u> sp.	(Kwichasi)*	Wild onion	bulb
2. <u>Calochortus</u> <u>nuttallii</u> <u>kennedyi</u> <u>luteus</u>	sigo'o (sixo'o)	Mariposa lily (Wild sego)	bulb
3. <u>Cymopterus</u> <u>newberryi</u> <u>purpurens</u>		Water parsnip	roots
4. <u>Claytonia rosea</u>		Spring beauty	racimes
5. <u>Frasera</u> <u>speciosa</u>	Kwiu	Deer-ears	root
6. <u>Fritillaria</u> <u>atropurpurea</u>		Fritillaria	bulb
7. <u>Iris</u> sp.		Iris	bulb
8. <u>Juncus</u> sp.	(paxwav)	Tule	root
9. <u>Orobanche</u> <u>fasciculata</u> <u>multiflora</u> <u>ludoviciana</u>	(Tu'u)	Broom rape	
10. <u>Perideridia</u> sp.	Yampa		roots
11. <u>Psoralea</u> <u>castorea</u> <u>memphitica</u>	(Kwaovi)	Scruf-pea	roots: raw and roasted
12. <u>Scirpus</u> <u>valudus</u> <u>acutus</u>	(To'oivi)	Bullrush	roots
13. <u>Typha</u> <u>angustifolia</u>	Tonoz (Tonovi)	Cattail	pound root
14. <u>Valeriana</u> <u>edulis</u>		Tobacco root	racimes

HDR Sciences 1980:34; Kearney and Peebles 1942:194-95, 300, 837, 162, 859, Kelly 1934:558; Bye 1972:93, 97-8; Burton, R. 1861:479; Dobyns 1974a.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.



TABLE 10. FRUIT GATHERED BY SOUTHERN PAIUTE

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
1. <u>Arctostaphylos</u> <u>patula</u> <u>pungen</u>	(Ararumpipi)*	Manzanita	fresh, dry, grind
2. <u>Comandra</u> <u>umbellata</u>		Bastard toad-flax	eat raw
3. <u>Echinocactus</u> <u>engelmanni</u>		Nail-keg cactus	eat raw
4. <u>Opuntia</u> <u>basilaris</u>	Yuavimp(u) (Yuavi)	Prickly pear	eat raw, sun dry
5. <u>Prunus</u> <u>virginiana</u>	Tonap(i)	Chokecherry	mash, dry
6. <u>Yucca</u> <u>baccata</u>	Tcimpi (Tachempi)	Yucca	roast, pound sundry

Bolton 1950:211; Stewart 1942:251; Laird 1976:107,108; Kearney and Peebles 1942:198, 411, 610; Bye 1972:98.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 11. NUTS AND BLOSSOMS GATHERED BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
<u>NUTS</u>			
1. <u>Pinus</u> <u>edulis</u> <u>monophylla</u>	(Tava)* Tivah	Pinyon	roast; grind
2. <u>Quercus</u> <u>pungens</u>	(Tomampi) Tomump	Acorns	roast
Stewart 1942:250; Laird 1976:106, 109; Bolton 1950:212, 215; Kearney and Peebles 1942:61, 420; Bye 1972:98, Kelly 1964:44.			

<u>BLOSSOMS</u>			
1. <u>Opuntia</u> <u>basilaris</u>	(Yuavimpi)	Prickly pear	fresh buds
2. <u>Yucca</u> <u>brevifolia</u>		Joshua tree	fresh
3. <u>Yucca baccata</u>	(uusi) O-u-se	Yucca	fresh
4. <u>Typha</u> <u>domingensis</u>		Cattail	eat flowers raw, cooked as soup
Stewart 1942:251; Kearney and Peebles 1942:198, 610; Bye 1972:91; Jones 1870:216.			

- \* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 12. PARTS OF PLANTS CONSUMED BY SOUTHERN PAIUTES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	PROCESSING
<u>COOKED PLANT PARTS</u>			
1. <u>Agave</u> <u>utahensis</u>	Nanta Yant	Mescal	cut, pit roast pound, sundry
2. <u>Echinocactus</u> <u>johnsoni</u> <u>leonti</u>		Nail-keg cactus	cook pith
3. <u>Eriogonum</u> <u>inflatum</u>		Desert trumpet	cook plant
4. <u>Opuntia sp.</u>	(manavimpi)* Manavi	Prickly pear	cook new leaf
Laird 1976:108; Kearney and Peebles 1942:204; Bye 1972:90, 98, Burton 1861:478.			

<u>FRESH GREENS</u>			
1. <u>Amaranthus</u> <u>powellii</u> <u>retroflexus</u>	(Kumut*) Pun-kont	Pigweed	pot herbs
2. <u>Caulanthus</u> <u>crassicaulis</u>		Squaw Cabbage	plant
3. <u>Desurainia</u> <u>pinnata</u> <u>halictorum</u>	(Ak*) Hahck Ak Ok	Tansymustard	pot herbs
4. <u>Orobanche</u> <u>fasciculata</u>	(Tu'u)	Sand food	raw plant
5. <u>Stanleya</u> <u>pinnata</u>	(Tamara*) (u)	Desert plume	raw plant
Euler 1966:112; Kearney and Peebles 1942:97; Train <u>et. al.</u> 1941:108 Bye 1972:91, 93, 94.			

EXUDATE

- 
- |    |                   |          |           |            |
|----|-------------------|----------|-----------|------------|
| 1. | <u>Phragmites</u> | Pah-gump | Honey dew | scrape off |
|    | <u>communis</u>   |          |           |            |
- 

Euler 1966:112; Heizer 1945:140-45; Kearney and Peebles 1942:97; Train  
et. al. 1941:116; Bye 1972:91.

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- Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

lower Virgin River quarried rock salt from a large, long exploited cave near the river. Mojaves certainly traveled up stream to trade for cakes of this rock salt and mineral pigments (Brooks 1977:64). Local Paiutes "brought" rock salt to give or trade to members of the 1830 trade party going to California from New Mexico (Camp 1966:92). No doubt the rock salt also found a ready market at the Oraibi trading center. It could be quarried with relatively little effort, but quarrying it did mean that the Southern Paiutes had to produce or obtain sufficient food to sustain themselves while engaged in quarrying, and then while traveling to dispose of the salt at Oraibi. These often denigrated people engaged in economic planning in a form of capital accumulation and investment, and in deferment of gratification in terms of at least some commodities.

Turquoise. Two other clues indicated that Southern Paiute traders dealt to a significant extent in two other quarried minerals. Turquoise recovered during excavation of the Northern Piman settlement known as Snaketown has been identified as having been quarried in Southern California about 90 miles west of Kingman (Haury 1976:278). In 1896, an Indian called "Prospector Johnnie" led Euroamericans to Nevada turquoise deposits that had been worked by Native Americans at an earlier period. Various miners quarried turquoise at Crescent, Nevada, from 1897 to 1906 (Paheer 1970:284).

Mineral Pigments. Smith's observation that Mojave traders sought "ochre" among the Santa Clara River Paiutes (Brooks 1977:64) indicates another major quarried commodity that Southern Paiutes exported. This was mineral pigment. The frequency with which colonizing Euroamericans learned about surface veins of silver and lead ores from Southern Paiutes attests to their pre-conquest knowledge of such outcrops as sources of pigments. Southern Paiutes pointed out to eager Euroamericans the lead/silver deposits of Potosi, copper at Grand Gulch, silver at Pioche, Hiko, Pahrnagat District, Freyburg and probably gold at Delamar (Paheer 1970:265, 291, 298, 301, 303). Southern Paiutes also knew the location of outcrops of coal which they probably utilized as a black pigment rather than fuel (DESERET NEWS 13 Dec. 1851:3). Moreover, they also knew the location of at least one "mound of crystalized gypsum in broad sheets and other forms" (Willes 1857:133). While the Southern Paiutes no doubt quarried some of these pigments for their own use as face and body paints, they surely exported some to Mojaves and probably the Oraibi traders.

Summary. When Francisco Garces crossed Northeastern Pai country in 1776, he saw Pueblo textiles and European metal in use by the westernmost band (Coues 1900:11:319-320). Travelers among the Southern Paiutes, in contrast, hardly mentioned their wearing Pueblo textiles and emphasized their total lack of metal artifacts. By 1826, Mojaves had a few horses, "Spanish"

blankets (Brooks 1977:71, 74) which the Southern Paiutes did not. Southern Paiutes did not, therefore, acquire such items by intertribal trade. Evidently they sought foodstuffs from the horticultural Hopis and Mojaves, along with ceramic containers and perhaps other perishable products unknown.

### THE SPANISH COLONIAL PROGRAM

The Southern Paiutes lived within a geographic area that colonial Spaniards envisioned as one over which Spain exercised sovereignty. At least, Spain claimed the entire Rancherian Culture Area on the northern frontier of New Spain as its domain, to the exclusion of the territorial claims of other European colonial powers. On the other hand, Spanish colonial authorities wielded no power among the Southern Paiutes or even their immediate Native American neighbors. Consequently, the Spanish colonial program for converting Native Americans to Christianity and integrating them into the colonial economy did not directly affect Southern Paiutes.

By the eighteenth century, the frontier Indian-fighting military post, or presidio, had become one of the principal cross-cultural contact institutions of the Spanish overseas empire (Dobyns 1980:16-20). The northernmost presidio of New Spain was Santa Fe, New Mexico, on the Rio Grande. It was hundreds of miles east-southeast of the nearest Southern Paiutes, those of the Willow Springs Band. The northernmost presidio in the northwestern province of Sonora was Tucson (Dobyns 1976a). It was hundreds of miles south-southeast of even the nearest Chemehuevi Band of Southern Paiutes that ranged along the western bank of the Lower Colorado River as far as Chemehuevi Valley. Cavalry patrols from Santa Fe and Tucson never penetrated as far as Southern Paiute territory. These presidios achieved no direct effect on Southern Paiutes.

Beginning in 1769, Spaniards colonized the Pacific Coast of Upper California. During the following decade, military posts were established at San Diego, Santa Barbara and San Francisco. Except for occasional expeditions eastward across the coast range, the coastal garrisons faced local Native American groups and crews of ships sailing along the coast. While the western Chemehuevi frontier lay only a few score miles east of the colonized coastal zone, royal troops never penetrated Chemehuevi country in any significant way.

Missions. Eighteenth century Spanish colonial policy relied very heavily upon the Christian mission as a primary cross-cultural contact institution on the northern frontier of New Spain (Spicer 1962:288-298). The Franciscans never established a Christian mission north of the Tucson presidio on the Sonoran frontier (Dobyns 1976a). On the other hand, members

of that order did staff missions far to the west of Santa Fe. During the seventeenth century, they founded missions among the Hopi Pueblos and conducted them for half a century. The Hopis succeeded in terminating that missionary thrust during the 1680 Pueblo Rebellion (Hackett 1942). Neither Spanish military supremacy nor missionary activity was effectively restored among the Hopis after 1680 (Euler and Dobyns 1971). Zuni Pueblo became the effective western frontier of Christendom in the Province of New Mexico. While Zuni is far to the west of Santa Fe, it is still only about half the distance from Santa Fe to the Willow Springs Southern Paiutes. Missions established on the Pacific coast beginning in 1679 had as little effect on Chemehuevis as the military posts there.

Yet, Franciscan missionaries initiated face-to-face contact between Europeans and Southern Paiutes. A few energetic Franciscan priests undertook long-range geographic exploration beyond the effective mission frontier in 1776, while English crown colonies on the Atlantic seaboard of North America began their political evolution against royal rule. The Reverend Father Francisco H. T. Garces left his mission at St. Francis Xavier at Bac, 12 miles south of the Presidio of Tucson, crossed the desert to the Lower Colorado River, and explored north up that stream. After reaching Mojave Valley, the intrepid Garces struck off westward across Chemehuevi territory to San Gabriel Mission on the Pacific Coast. He re-crossed Chemehuevi country after exploring part of the Central Valley of California, but did not linger among the Chemehuevis. The groups he did encounter in the arid desert were simply peoples along the route over which Garces hastened from major river to major river (Coues 1900:I:306-08).

Garces's explorations expanded Spanish knowledge of the tribal territories beyond the presidial-mission frontier of Sonora. The relationships he and military/civil officers such as Lt. Col. Juan Bautista de Anza established with the Quechan and other peoples beyond the colonial frontier resulted in an expansion of the slave trade that had been going on since at least the 1730s (Ives 1939). Native American mortality during the 1779-1783 smallpox pandemic evidently created a shortage of subordinate group laborers and servants that stimulated dominant group demand for captives from beyond the colonial frontier (Dobyns 1966:441-43). Certainly Sonoran Spanish purchases of Quechan, Northern Panya, and Yavapai women and children stimulated an intensification of intergroup conflict among Lower Colorado River tribes (Dobyns, Ezell, Jones and Ezell 1957). Available documentation shows that Sonoran demand for human slaves known by the euphemism "Nixora" resulted in purchases of captives from as far north as the Mojaves (Dobyns, Ezell, Jones and Ezell 1960:230 ff). Capture and sale of Southern Paiute children on the Sonoran frontier cannot, on the other hand, be documented. It is possible, however, that Northern Panya captured Chemehuevi children to exchange southward prior to 1827.

Francisco Garces carried out his explorations with no European companions, and often no more than a single Native American companion other than local tribesmen who guided him across their national territories. Two Franciscans in New Mexico also explored well beyond the mission frontier in 1776, but they traveled with a military escort that included a map-maker. They struck off toward the northwest from Pueblo country. They continued generally northwest to Ute country. They then veered around more or less in a circle, and crossed Southern Paiute territory, forded the Colorado river into San Juan Paiute Band territory and returned to the western Pueblos and New Mexico (Bolton 1950:228). Whereas Garces reported a few Chemehuevi camps in the arid Lower Sonoran desert, Escalante and his companions reported horticultural bands in the Upper Sonoran vegetation zone. The Paiute populations they described were larger and more numerous than those of the Chemehuevis.

As in Sonora, the Native American losses in New Mexico during the 1779-1782 smallpox pandemic motivated colonial Spaniards to seek increasing numbers of captives to become servants and slaves/laborers. New Mexicans referred to such captives as Genizaros, and such detribalized Native Americans constituted a significant portion of the provincial population. From the 1780s on, slave raids began to slow Southern Paiute population growth, if it did not begin a steady depopulation of that tribe.

Spanish civilians in New Mexico carried on an illegal trade in human captives beyond the colonial frontier. The King of Spain had long since prohibited slavery in New Spain, but left the legal loophole that allowed captives taken in a "just war" to be enslaved. The colonists simply treated captives that one Native American ethnic group took from another and traded to the Spaniards, as having been captured in "just wars." Traders ventured northwest of the border of colonial New Mexico to exchange European goods, Pueblo textiles, and horses for Native American captives. Apparently, New Mexicans were not above engaging in a bit of slave raiding of their own on occasion. It is clear that Spaniards took Navajo captives whom they attempted and sometimes succeeded in adding to the Genizaro population.

Those Uto-Aztecan speakers who became known during the nineteenth century as "Utes" evidently became the main source of human captives from the vast zone northwest of colonial New Mexico. The frequent armed clashes between Navajos and New Mexicans inhibited development of a large-scale slave trade between members of those two ethnic groups. On the other hand, Utes traded directly with New Mexicans on the colonial frontier. They participated in the trade fairs at Taos Pueblo (Thomas 1940). They also participated in the lively trade conducted by the Genizaros of Abiquiu, a frontier trading center on the Chama River (Malouf and Malouf 1945:380). If



mid-nineteenth century behavior accurately reflects earlier activities during colonial times, Utes also traded with Navajos, thus obtaining horses, guns, and munitions that Spaniards legally were not supposed to provide them.

The principal commodity that the Utes appear to have exchanged to the Genizaros and Spaniards for the goods that transformed their economy and entire way of life were Southern Paiute captives (Malouf and Malouf 1945:381-82). There seems to have been a demographically significant difference between the Sonoran and New Mexican slave trades. That is to say that the Sonorans purchased almost entirely children aged 10 years or younger, although occasionally they acquired girls in their early teens. In contrast, there was a clear component of adult sexuality in New Mexican purchases of Southern Paiute captives and in Ute preservation of captives. That is, New Mexicans purchased a significant number of adult though relatively young women, and Utes captured and spared the lives of women whom they turned into concubines. When Chief Walker, head of the largest Ute mounted raiding band died, for example, his survivors sacrificed not only 40-odd of his horses, but also several of his Southern Paiute concubines so that his spirit would have adequate and appropriate company in the afterworld (Huntington 1855:3).

The New Mexican purchases of Southern Paiute women raises an intriguing question about the later Euroamerican stereotype of Paiutes as lowly "Diggers." If the New Mexicans perceived Southern Paiutes as "degraded" and culturally deprived, they evidently also perceived Southern Paiute women as attractive enough for sexual exploitation. No doubt Southern Paiute women adapted to the circumstances as women have throughout human history when abducted by superior military force.

Whatever factors created the strong New Mexican demand for Southern Paiute women, they very adversely affected Southern Paiute reproduction rates. The loss of captive children, and adult casualties during slave raid encounters constituted a major drain on Southern Paiute population. The obvious Ute strategy of capturing women to become their own concubines as well as to trade to the New Mexicans multiplied the impact of slave raiding on Southern Paiute reproduction by an unknown but clearly sizeable factor. Thus, the entire Spanish colonial program that affected the Southern Paiutes, including well-intentioned missionary explorations, amounted to four decades of intensification of slave raiding, with negative demographic consequences.

## THE MEXICAN PROGRAM

When Mexico became independent of Spain, its leaders instituted major changes in national policy toward Native Americans. Imbued with ideals enunciated during the French Revolution, Mexican politicians wrote a constitution and laws that classified everyone born within the borders of the country as a citizen. That meant that town governments legally were operated by authorities elected by all male citizens. It also meant that title to land was individualized. These last two policies struck at the foundations of Native American ethnic group autonomy and continuity (Spicer 1962:334-335). Such changes had profound impacts upon Native Americans within Mexico's effective frontiers. They did not, on the other hand, change conditions of groups beyond the frontier such as the Southern Paiutes.

Political independence involved casting off a number of royal policies that residents of New Spain regarded as restrictive. The heady atmosphere of change generated nearly a decade of energetic entrepreneurship, exploration, and expansion of trade with the United States on Mexico's northern frontier. That burst of activity during the 1820s directly affected Southern Paiutes. Freed from crown decrees against human slavery, Mexicans expanded their rate of acquisition of Native American captives from tribal trading partners. They also undertook more or less open slave raids. By the end of the new decade, New Mexicans had raided as far as the Mojaves (Armijo 1954:164).

Whatever level New Mexican trade with Utes had been reached by 1821, it expanded after independence. Walker assembled his raiding band of Utes, became thoroughly mobile on horseback, and stole not only women and children but also horses from the mission herd of Upper California. Moreover, enterprising New Mexicans explored before the end of the first decade of independence a new overland trade route between the Rio Grande and the Pacific Coast. In 1829, Antonio Armijo (1954:155ff) led a hardy group of traders across Southern Paiute territory to Southern California. From the Virgin River on to Mission San Gabriel, the New Mexicans followed in the tracks of Jedediah S. Smith, who followed Native American guides from Great Salt Lake to San Gabriel in 1826 (Brooks 1977) and followed essentially the same route in 1827 (Sullivan 1934).

Opening the "Old Spanish Trail" by Mexican citizens significantly and permanently changed Southern Paiute circumstances. From 1826 on, Southern Paiutes faced direct Euroamerican competition for basic water, food and other natural resources. That competition was very serious for Southern Paiutes from its very initiation, because the Old Spanish Trail crossed the riverine oasis production heartland

of Southern Paiute territory. Euroamerican travel through Southern Paiute country generated face-to-face contacts, but what Euroamericans did affected the native population more than the intergroup contacts.

The trappers such as Smith, and the New Mexican traders, all rode horseback. The traders transported their textiles to California on the backs of horses and mules in pack trains, and returned with California-bred horses and mules in numbers. Traveling through largely arid and semi-arid country, those animals preyed on the relatively lush vegetation in the riverine and spring oases along the route. Those oases were precisely the core of Southern Paiute food production zones. Because the Paiutes had not yet acquired horses, they had not yet started to fence their fields. Consequently, there can be little doubt that passing horses and mules at times consumed Paiute maize and bean plants, Amaranth and Chenopods, and even squash and pumpkins. Pack trains became a serious threat to Southern Paiute food production. The traders and trappers passing through might prove hostile and shoot Southern Paiutes on sight, so that continued habitation in the major riverine oases became very risky. The mounts and pack animals of the travelers might consume growing crops and overnight ruin an entire season's investment of seed, irrigation water and labor.

This sort of change was extensive in the Virgin River watershed, yet the ribbon oases did offer numerous alternative village and field sites to which Southern Paiutes evidently migrated from the immediate vicinity of the Old Spanish Trail. Certainly this was a Paiute strategy for coping with Mormon encroachment at mid-century. Then, Chief "Tokers" retreated up Ash Creek from previously exploited fields. In June of 1854, members of his band were "grubbing, burning tree, and clearing small patches of land of from one to three acres, at the base of the mountains on the eastern side of the river" (Brown 1854:2).

The following year, a U. S. army officer reported the pattern of disruption in riverine Paiute oasis sedentarism that occurred when potentially hostile travelers appeared. Circumstances had changed by 1855. LDS Church missionaries visited the Southern Paiute local groups and praised the virtues of Mormons while denigrating non-Mormon Euroamericans. When Lt. Sylvester Mowry's small troop command approached the Moapa River, therefore, women and children fled into remoter canyons. The chief and warriors received Mowry in "war paint" (Bailey 1965:344). Prior to 1851, the riverine Southern Paiutes had no one to mediate between them and Euroamerican travelers. So flight was the only defense against attack. Thereafter, Mormons mediated between Southern Paiute riverine horticulturalists and Euroamerican travelers.

Spring-flow oasis Paiute habitats were more vulnerable to Euroamerican predation. The Las Vegas oasis specifically was

vulnerable, because Euroamerican travelers and their livestock placed very heavy demands upon its finite natural resources. The spring flow water supply was adequate for travelers and local Southern Paiutes alike. Paiute annual crops could not, on the other hand, prosper under the assaults of eastbound livestock that had last found adequate forage at best on the Mojave River and really on the coast side of the Sierra Nevada. While documentation is lacking, it seems virtually certain that Southern Paiutes grew some annual food crops at the Las Vegas oasis prior to 1826. After regular annual Euroamerican travel between California, New Mexico and Great Salt Lake began, it is likely that Paiutes had to abandon planting annual crops in Las Vegas oasis. The oasis continued to function as a major resource base because of its large mesquite pod crop, small game, and water, but it contributed markedly less to the tribal food economy after 1826 than it had previously.

At least one additional dimension of Euroamerican impact on oasis resources bears mention. Euroamerican travelers cut firewood wherever they camped in order to cook their food and to warm themselves. Some cottonwood and willows grew in the Virgin River watershed oases, and Euroamericans may have cut them disproportionately because those phreatophytes lacked defensive thorns. Willows were small, however, and cottonwoods soft whereas experienced desert travelers learned that the hardwood of the mesquite yielded high heat and burned down into excellent coals. Every time a Euroamerican traveler chopped down a mesquite tree to burn, he diminished the total food supply available to Southern Paiutes.

By the time Euroamericans began to cross Southern Paiute territory, they had learned to hunt game to supplement whatever food supplies they carried with them. Consequently, every Euroamerican party that traversed the Old Spanish Trail diminished the animal protein supply available to Southern Paiutes. Jedediah Smith, for example, killed several antelope soon after entering Southern Paiute country, and his party killed two mountain sheep in the uplands between Santa Clara River and Moapa River (Brooks 1977:53, 62).

Probably the most far-reaching impact that Euroamericans had on game in Southern Paiute territory was not reducing the numbers of big game animals, but exterminating a medium-sized game animal, the beaver. For Jedediah S. Smith was seeking beaver pelts in 1826 and 1827, and other Euroamerican travelers also carrying traps would shoot beavers when possible. Euroamerican trapping of beaver was important not merely in terms of beaver meat, but also in terms of the water economy of Southern Paiute territory. When beavers formed part of the fauna of the riverine oases, their dams and their ponds also constituted part of the oasis environment. Beaver ponds were desirable environments for at least some of the fish species present in the river system. Ponds attracted migratory

waterfowl, and probably supported local oasis populations of resident birds such as herons. Thus, beaver ponds increased the animal protein productivity of the riverine oases, and facilitated both hunting and fishing success.

In addition, beaver ponds must have contributed to alluvial soil building over periods of time. The streams forming the Virgin River watershed in many instances have steep gradients, especially upstream. Beaver ponds would have slowed the rate of stream flow, and impounded flood waters during storms, minimizing erosion. Whatever soil the streams carried would have built up in the ponds, forming fertile alluvial deposits Paiutes could cultivate once a pond dried up after its beavers moved elsewhere (Dobyns 1981:106, 114-16). Euroamerican beaver trappers set in motion an inexorable process of environmental deterioration of the riverine oases, significantly detrimental to the Southern Paiute food economy.

The environmental and life-way changes that Euroamerican travel across Southern Paiute territory started had a negative impact on the tribal energy budget. As Euroamerican travelers and their livestock made sections of the riverine ribbon oases untenable, Southern Paiutes necessarily expended more energy than before in migrating to new settlements, building new wickiups, and especially in excavating new irrigation canals with 4-inch wide digging stick blades while burning and grubbing out tree and shrub growth. Moreover, as intruders made horticulture unfeasible at spring-flow oases such as Las Vegas, Southern Paiutes who had depended upon food crop production there necessarily spent more energy traveling between mesquite-small game oases and horticultural oases elsewhere. The trails that Southern Paiutes had already trodden into the surface of the land assumed greater practical and symbolic importance to them as they had to travel them more and more often.

Euroamerican travel forced Southern Paiutes to become somewhat less sedentary and more transhumant than they had been. Naturally, Southern Paiutes living at riverine and spring-flow oases affected by Old Spanish Trail traffic resented that Euroamerican disruption of their lives. The aboriginal inhabitants apparently attempted to collect toll from travelers by hunting their livestock. Not recognizing that they were trespassers who ought to be paying tolls for crossing Paiute territory and consuming scarce oasis resources, travelers naturally responded with hostility toward such toll collection. The eventual result of Euroamericans opening a transportation corridor across Southern Paiute territory was interethnic conflict. Southern Paiutes began to resent Euroamericans moving commodities across their territory and deteriorating the quality of their oasis life. Many similar Euroamerican actions have since strongly reinforced negative Southern Paiute sentiments toward exploitation of their

aboriginal Holy Land by members of intrusive secularized ethnic groups.

#### THE AUTONOMOUS CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS (LDS) PROGRAM

In 1846, the United States and Mexico went to war. United States troops rode and marched into the northern Mexican province of New Mexico, occupied it, and advanced into Upper California. They traversed the Gila River route at the northern limit of effective Mexican colonial alliances with the Gila River Pimas and Maricopas. Mexican territory farther north, never colonized, was cut off from Mexican military control. It was, on the other hand, not to become legally annexed to the United States until ratification of the Treaty of Guadalupe Hidalgo, negotiated in 1848. Into a remote Great Basin portion of that vast northern terrain in limbo moved advance parties of a dissident religious sect. Brigham Young and other leaders of the Church of Jesus Christ of Latter Day Saints took a wagon train west from Iowa to Great Salt Lake in the summer of 1847. The Mormon pioneers quickly set to work establishing Great Salt Lake City toward the southeast shore of the lake. They also promptly plowed wheat fields and began setting out fruit trees and gardens just as soon as they could. Thus, members of the LDS church in 1847 initiated a largely pacific but nonetheless crucial invasion of the territories of the Numic speaking peoples. Brigham Young, the effective executive head of the LDS Church, proved to hold a view of proper European/Euroamerican relations with native Indians markedly different from those of United States policy-makers at the time. Yet, Young and his followers differed not at all from other non-Indian pioneers in fervently believing that they possessed a God-given right to settle on lands and waters that had belonged to Indian peoples since times immemorial.

#### COOPERATIVE FARM VILLAGE SETTLEMENT

The basic unit of Mormon settlement was a cooperative farming village, composed of Europeans almost all from Northwestern European nations, and Euroamericans of the same ethnic background. Because the environment the Mormons set out to colonize was relatively arid, they had to irrigate crops to succeed in harvesting them. This meant that Mormons colonized precisely the riverine and spring-flow oases that provided the bulk of the food resources of the Southern Paiutes prior to contact. Long before the LDS Church advance guard arrived at Great Salt Lake in 1847, it had numerous missionaries seeking converts overseas. Those missionaries proselytizing in England

enjoyed more success in number of converts than those working in Wales, Scotland, Ireland, Scandinavia, Denmark, and Germany, etc. The overseas missionaries arranged year after year for hundreds of converts to emigrate from their homelands, and make their way across the Great Plains to Great Salt Lake City. Even before the valley around that lake filled with settlers, Young and the other church officials formed groups of men to found additional settlements. In 1848, the thrust went north of Great Salt Lake City to Ogden. The local Native Americans resisted the invasion; the Mormons "resorted to discipline" in their terms and killed four (Anderson 1942:101). In the spring of 1849, some 30 men ventured 50 miles south of Salt Lake City to found Provo near the shore of Utah Lake.

#### INVASION OF SOUTHERN PAIUTE TERRITORY: Parowan.

Only a year and a half later, Mormons pushed their settlements into Southern Paiute territory. On 13 January 1851, a company arrived in Little Salt Lake Valley to found a settlement. It was called Parowan after "a local Indian chief" (Anderson 1942:105). By July, the Mormons had opened at least one 7-mile long irrigation canal "to water the lower surveys in our field."

The Southern Paiute reaction to the Mormon invasion and appropriation of tribal resources took the form of collecting a toll. As the leader of the invading force phrased it, the Indians "imagine they have a right to our cattle, for they have foreclosed on a number of them" (G. A. Smith 1851:301). On the other hand, the Southern Paiutes also welcomed Mormon colonists to at least some extent as peacemakers who would protect them from Ute Chief Walker and his raiding band that abducted women and children. Consequently, Southern Paiute reception of Mormon colonists was markedly ambivalent. When the latter followed Young's instructions to maintain peaceful relations with the Indians, Southern Paiutes lingered in their oases where the Mormons settled. They were even willing to show the strangers the location of important (to them) natural resources such as coal deposits (J. L. Smith 1851:3). Yet the Paiutes continued to collect a livestock toll, and the Mormons began to kill those whom they could catch (Lee 1852:1). The Mormon invasion of the riverine oasis below Bowery, Center and Parowan Creeks may have motivated the Paiutes to move their summer settlement across the mountains to the east of the shores of Lake Panguitch (Smith and Steele 1852:1). By the fall of 1852, the main outlines of Mormon-Southern Paiute relations were defined. Brigham Young insisted that the Latter Day Saints act like saints, and avoid fighting the native peoples. Like earlier fundamentalist sectarians in North America imbued with the Protestant work ethic (Axtell 1981:48), Young urged his followers to teach Indians to labor (Adams 1852:2).

Transition to Paid Labor. Apparently, the Southern Paiute native work ethic and food preservation and conservation ethic, could not abide letting cultivated foodstuffs spoil in the riverine oasis--even if members of another ethnic group planted the crops where Paiutes had formerly gardened. Thus, Southern Paiutes pitched in to help the Mormons at Parowan harvest their wheat, maize, squash, pumpkins, turnips, beets and potatoes in the fall of 1852. One of the settlers wrote to the editor of the church newspaper, "I will say this much concerning the Indians--only for their labor, there would have been hundreds of bushels of produce lost, that could not have been saved by the white population. . . ." Even more striking is the settler's admission that the Southern Paiutes out-labored the Mormons: "I consider myself a common hand, to work, but I must give up to some of the pienes (Paiutes) for quickness." The letter-writer perceived the Southern Paiutes as working more "willingly" than the Pahvant Utes. From 100 to 200 natives camped near the Mormon settlement through the summer and fall (Adams 1852:2). Evidently Brigham Young's policy of at least limited reciprocity toward the Indians resulted in a perhaps unconscious accomodation of Mormon and Southern Paiute interests. Southern Paiutes supplied labor the Mormon pioneers sorely needed, and the latter paid them in kind out of their farm harvests. Almost imperceptibly, Southern Paiutes began a transition from independent entrepreneurship to dependent wage labor, for European/Euroamerican colonists. By the fall of 1852, Southern Paiutes already had begun to establish their persisting economic role, subordinate though it may have been, in the future national market economy.

Cedar City - 1851. Meanwhile, the LDS Church leadership had ordered a contingent of settlers to found another village southwest of Parowan, closer to iron ore deposits. Brigham Young wanted the Mormons to become self-sufficient in iron just as quickly as possible. After gathering the first harvest at Parowan, 35 men set out in November of 1851 to build a fort at what became known as Cedar City 20 miles away. So both Parowan and Cedar City were founded as farm villages to raise their own food, but also as budding industrial towns to smelt iron. Most were artisans such as coal miners, coke makers, masons and carpenters. As food-raisers, these Mormons diverted irrigation water from Coal Creek, which flows westnorthwest through the Cedar Canyon break in the Hurricane Cliffs (Anderson 1942:121).

Fort Walker - 1851. Very soon, three families built a small "fort" on another creek draining northwest off the Cedar Mountain section of Hurricane Cliffs. It was known at various times as Fort Walker, or Shirts' Fort. One Mr. Shirts made salt there (G. A. Smith 1852:2). The salt-making operation was six miles southwest of Cedar City.



INVASION OF THE RIVERINE OASIS CORE TERRITORY: Harmony - 1852.

Toward the end of 1852, an LDS party led by John D. Lee and consisting of 15 men capable of bearing arms crossed the watershed at the south end of Parowan Valley. They set about constructing a defensive fort "on the first water South of the rim of the Basin." This was on Ash Creek, which flows almost due south into the Virgin River. Ironically, while six teams hauled lumber from Parowan, "ten men and several Indians are constantly employed building the Fort" (Smith 1852:2). Thus, Mormon invasion of the Virgin River oases began in the final month of 1852.

While the initial Mormon settlement in the watershed was then still far upstream from the southern Nevada downstream region, it must be assumed to have had some quick and probably immediate biological consequences for the Southern Paiutes everywhere downstream from Fort Harmony on Ash Creek. This is because the LDS church settlers clearly carried with them water-borne intestinal parasites and/or germs. Both the Mormon settlers and the Southern Paiutes drank from the streams. LDS Church burial records make clear that Mormon settlers in the Virgin River watershed suffered very high child and infant mortality as long as they continued drinking from the streams and irrigation canals. At St. George, founded in 1862, 506 persons died between founding and 1881. Of that total, 324 were children under five years of age, and 57 were children 5-15 years old (Anderson 1942:360). That is, 64 percent of the deaths were children under five years of age. That pattern occurred at Parowan and Cedar City. By the end of 1852, "there have only been three deaths among the inhabitants of the County since it was first settled and they were all children" (G. A. Smith 1852:2). Given the small size of the villages, three deaths meant a relatively high death rate. The Mormons were simply accustomed to its being high.

In the summer of 1854, the flow of irrigation water in the ditches at Harmony dried up. Late summer rains saved the crops the LDS colonists had planted, but they recognized that the settlement was not well located (Corbett 1952:56-57). On 10 December, the mission leadership announced a double move. The Harmony colonists moved to the site of enduring New Harmony, where they opened a 5-mile long irrigation canal between Ash Creek and their fields. The original settlement became known as "Old Harmony."

Santa Clara 1854. A few LDS missionaries were dispatched to found another settlement on Santa Clara Creek, the Tonaquint of the Southern Paiutes. They began on 15 December felling cottonwood trees to make log houses, aided by some of the estimated 800 natives living along the creek (Corbett 1952:66-67).

While the Mormon missionaries who founded Santa Clara at the end of 1854 were few in number, they had been living at Harmony. They came, in other words, from the same Euroamerican population that initiated pollution of the Virgin River watershed with Old World water-borne diseases. Whether they immediately reinforced such pathogens in the river system is not clear. Even if they did not, they established the Euroamerican-European habitation base that attracted later migrants who did introduce lethal and sublethal water-borne diseases into the system.

Part of the southern Zion mission chosen in the fall of 1861 consisted of Swiss converts to Mormonism. They were expected to establish vineyards. Their 14 wagons led by Daniel Bonelli arrived at Santa Clara on 28 November 1861. These immigrants set to work excavating an irrigation canal. The early 1862 flood drove them to higher ground, eroding away the canal so that they spent four times as much labor to replace it (Brooks 1961:212-14). A decade later, 12 of 20 families still were Swiss; the colonists had 100 children attending school, and no poor residents. These industrious folk marketed dried fruits and wine. Wine making continued until 1892 when the Stake High Council prohibited serving wine at the sacrament in any ward. In 1900, the Church counseled against making wine, and advised digging up wine grapes and planting Thompson Seedless from which to make raisins. Then another flood early in the twentieth century eroded away the vineyards (Brooks 1961:217). The Bonelli family pioneered ferry service across the Colorado River. There, the Bonellis became a folk legend among Native Americans on both banks of the stream.

Washington - 1857. Exploring Southern Paiute horticultural settlements in the Virgin River watershed oases, Jacob Hamblin recorded women gathering squawberries in 1854 on a field south of what soon became the Mormon town of Washington (Corbett 1952:52). Colonization began in April of 1857 as the LDS thrust into its Dixie to try to grow enough cotton to make Zion self-sufficient in that fiber. Euroamericans in 28 families, mostly from southern states, formed the colony (Brooks 1961:202). By 1858, when Santa Clara reported 5 acres in cotton, Washington claimed 130 acres in cotton (McNight 1858:141). Much of the alluvial soil was thoroughly impregnated with alkali, however, or otherwise unsuited for growing cotton (Brooks 1961:202-203). By 1864, the LDS Church leaders realized from sad economic experience that wagon-freighting raw cotton from Utah to Iowa was not profitable. They perceived that Mormon-grown cotton would have to be processed by Mormons to become profitable. So a cotton mill site was selected near Washington to be powered by river water (Brooks 1961:211). The mill was completed in 1867, and the walls raised in 1870 to create a second story to house machinery to handle wool or cotton-wool combinations.

The Union had won the War of the Rebellion, and the first transcontinental railroad had been completed in 1869. The Mormon Dixie simply could not successfully compete with historic Dixie in cotton production. Moreover, Mormon cultural values inhibited successful cotton growing. On the one hand, "white men" and women refused to pick cotton. On the other hand, "Indian labor was out of the question" (Brooks 1961:212). By the early 1870s the mill merely limped along, and continued doing so until mercifully closed in 1910.

Pine Valley - 1856. LDS colonists on the Santa Clara Creek explored the high-altitude headwaters of that stream. There they named Pine Valley Mountain, and a high valley Pine Valley. The latter offered the enticement of cool summer residence above the hot Santa Clara Creek Valley. Jacob Hamblin installed his family there in mid-1856, and other settlers soon followed (Corbett 1952:96-97).

Tonaquint (Heberville) - 1858. Disappointed by low cotton yields at Washington, Brigham Young and other church leaders decided to send 15 young men to farm experimentally at the confluence of Santa Clara Creek and the Virgin River (Brooks 1961:203). Their farm was near the 1820s Paiute Trading Center. In the spring of 1858, these colonists formed Heberville on the Virgin River nine miles south of Fort Clara. Besides their subsistence crops, they planted 33 acres to cotton during their first summer at the new settlement (McNight 1858:141). The Mormons called the place Lick Skillet, Never Sweat, Sedom Sop, and Tonaquint, as well (Brooks 1961:209). The U. S. Post Office Department chose Tonaquint as the name for the local post office late in 1861 (DESERET NEWS 8 Jan. 1861:217). The great flood early in January of 1862 cleanly scooped out the maize land, garden and fruit orchard, leaving a deposit of piles of mud and debris (Brooks 1961:210).

Toquerville - 1858. Other Mormon colonists expanded Zion's demographic hold on Ash Creek in the spring of 1858. They established Toquerville, named after an important Southern Paiute leader, in a narrow bottom 3 miles above its confluence with the Virgin River. These colonists planted only 8 acres to cotton their first season (McNight 1858:141). In 1859, Toquerville consisted of but 19 families. The Mormons began to prize it because one family specialized in making molasses (Bull 1860:13).

Pocketville - 1859. The cotton-growing initiative led to colonization of Pocketville. This settlement was located across the river downstream from Springdale (Brooks 1961:204). The January flood in 1862 eroded away great expanses of the farm land (Brooks 1961:210), militating against successful long-term colonization. The colony proved to be ephemeral (Brooks 1961:220).

Gunlock - 1859. On Santa Clara Creek, additional Mormon colonists founded another colony upstream from Santa Clara. This was called Gunlock (Brooks 1961:204). Thus, by 1860, Latter Day Saints inhabited no less than eight settlements in the headwaters of the Virgin River watershed, from high altitude Pine Valley downstream to Washington and Santa Clara and Tonaquint/Heberville at the Santa Clara-Virgin confluence. Many of their residents came directly from Europe, carrying germs and parasites transmitted to Southern Paiutes via the river waters.

St. George - 1861. In October of 1861, LDS Church leaders called 300 families from northern Utah settlements to join the Cotton Mission (Anderson 1942:229). That mission was rapid colonization of large irrigable sections of the riverine oases of the Virgin River watershed. A major contingent of the new colonists established the town of St. George on the main stream. They arrived at the beginning of December, and by early 1862 the Postmaster General had already approved setting up a post office with Orson Pratt, Jr., as postmaster (DESERET NEWS 8 Jan. 1862:217). By the first week of January, the new residents of St. George had already selected delegates to a Washington County convention (Bleak 1862:232). The townsite was selected to be as high as possible while drawing water from springs on the valley slope. Mesquite trees the colonists cleared from the site attested to the fertility of the soil (Snow 1862:280). Their removal destroyed yet another Southern Paiute source of carbohydrate food.

While Mormon colonists were still living in their wagons or in tents, a major winter storm system moved across the entire southwest with abnormally great precipitation (Dobyns 1981:170-72). Rain began falling on St. George during the Christmas dance, and continued for three weeks. Toward the end of that period, precipitation peaked, and the Santa Clara and Virgin River became "mighty rivers" that eroded away some of the best quality bottom land. The Virgin River flowed a quarter of a mile wide past St. George, cutting away a 5-mile long canal the colonists had leveled "along the banks of the Virgin." As fast as the Mormons constructed a new canal during the spring, the still high-flowing stream eroded it away (Brooks 1961:209-20). By the time the St. George colonists brought 420 acres under irrigation, they had built 900 feet of wooden tunnel, and the cost of dam and canal repairs rose to over \$64 per acre.

As Euroamerican urban settlement built up St. George, surviving members of the Southern Paiute camps that traditionally gardened along Santa Clara Creek moved to the town. Probably erosion triggered by poorly engineered Mormon irrigation works on the creek had destroyed the pre-colonization Southern Paiute field base on the creek. Southern Paiute adjustment to colonization by wage laboring required moving to new job locations. By 1868, a

post-colonization band of about 200 individuals led by Head Chief Tutzeguvut lived "close to and around St. George" (Fenton 1869:203). Many worked for Mormons, having put on Euroamerican style clothing and acquired horses by the early 1870s (Lockwood 1872:75). Taugon followed Tutzeguvut as head chief of this central Southern Paiute group, and probably was the last traditionalist who functioned as tribal head chief (Fowler and Fowler 1971:98). After his time the Southern Paiutes, economically dependent upon St. George Euroamericans, became simply one of the post-colonization settlement satellite labor gangs (Kelly 1934:552).

#### THE LATTER DAY SAINT PACIFIC PATH

The leadership of the Church of Jesus Christ of Latter Day Saints envisioned some kind of path to the Pacific Coast even before Brigham Young and his party left the prairies of Great Salt Lake. At the beginning of the war between the United States and Mexico, federal officers needed to expand their forces rapidly on the frontier. They enlisted an entire battalion of Mormons. That unit crossed the plains to New Mexico. Under the command of Lt. Col. Philip St. George Cooke(1878), the battalion opened a wagon road across southern Arizona, down the Gila River and across the Sonoran Desert to the Southern California coast in 1846. After they were discharged from federal service, veterans of the battalion scattered over California. Some worked at Sutter's Mill when gold was discovered there.

Few of the Mormons participated for any length of time in the gold mining fever. Brigham Young steadfastly hewed to an agrarian policy that defined food production as the foundation of LDS values. Consequently, most of the battalion veterans joined the Great Salt Lake Basin settlements, even while thousands of emigrants from the eastern United States traveled westward to the gold fields via the Great Salt Lake City. While some Mormons chose the central route across the Sierra Nevada, many opted to go south to the San Gabriel-Los Angeles area, and follow the Old Spanish Trail across the desert to the Cedar-Parowan Valley. There they turned north to Utah and Great Salt Lakes and the Mormon heartland. As a result, Mormon travelers significantly increased the frequency of Euroamerican travel along the Old Spanish Trail across Southern Paiute country. From just east of the Mojave River to Parowan, the riverine and spring-flow oases along the Old Spanish Trail became even more physically dangerous to Southern Paiutes than they had been during the 1826-1848 period. Southern Paiutes running a real risk of being shot on sight by travelers could make less and less economic use of natural and transplanted food plants at the oases along the trail. They certainly could not hope to raise annual food crops at the circumscribed spring-flow oases, where travelers burned more and more

mesquite and other wood and killed more and more of the quail, cottontail rabbit, and other small game reliant on oasis food and water supplies.

Colonizing San Bernardino. Brigham Young's geopolitical vision encompassed more than a travel corridor between the Great Basin valleys colonized by Latter Day Saints and the Pacific Coast. He envisioned a food-producing outpost on the productive coastal side of the Sierra Nevada. Consequently, an elite group scouted the terrain in the autumn of 1850, and members of the church purchased a large ranch in Southern California where they founded, in 1851, the cooperative settlement of San Bernardino. So important was this California settlement that two members of the elite LDS council of twelve led the group colonizing there (Anderson 1942:119). San Bernardino very quickly became the western anchor of the Old Spanish Trail, replacing San Gabriel mission and the Williams Ranch as the welcoming institutions for westbound travelers. Concurrently, the federal postal service contracted for regular mail deliveries in Southern California and at Great Salt Lake City by riders going frequently back and forth between those settled areas through Southern Paiute country.

Despite the annual threat posed by pack trains between New Mexico and California, and the unpredictable passage of horse and mule thieves such as Walker's raiding band, Southern Paiutes continued to exploit the resources of the Las Vegas oasis until 1848. Judge Orville C. Pratt (1954:355) camped there on 12 October that year, and recorded: "Pah Eutahs (Paiutes) here in great numbers, but they run from us like wild deer."

When Gold Rush emigrants and their successors by the hundreds and thousands took the western section of the Old Spanish Trail from Salt Lake City to Southern California, even the large Las Vegas oasis became virtually untenable for its aboriginal owners. Consequently, they turned to exacting such toll of livestock and other foodstuffs as they could. Howard Egan in December of 1849 noted that Indians "fired at" his train's livestock about 2 a.m. on December 24th. They killed and quartered one of four animals they drove off before two Mormons frightened them away (Egan 1954:314).

When LDS church contingents pushed into northern Southern Paiute territory as colonists on the road toward the Pacific, intergroup relations changed. That push began late in 1851. By May of 1855, the Mormons trusted the natives living on Santa Clara river sufficiently to trade firearms and munitions to over 70 of them (Bailey 1965:344).

Colonization at Las Vegas Oasis - 1855. Southern Paiute utilization of any resources of the Las Vegas oasis became so dangerous that the aboriginal people welcomed LDS colonization there in 1855. The Mormon colonists themselves heavily

utilized oasis resources. On the other hand, their presence as intermediaries with travelers enabled the beleaguered local Paiutes to make more economic use of the oasis with less danger of being killed than had been possible for six years. The key to Paiute receptivity toward Mormon colonists appears in a letter to the church newspaper in Salt Lake City:

Shortly after we arrived here, we assembled all the Chiefs, and made an agreement treaty with them for permission to make a settlement on their lands. We agreed to treat them well, and they were to observe the same conduct towards us, and with all white men. Peace was to be preserved with all emigrants traveling through this country, as well as with the settlers (Brighamurst 1855:174).

The relationship between Southern Paiutes and the LDS missionaries at Las Vegas was never smooth. Although Brigham Young had dispatched Latter Day Saints to Las Vegas as missionaries to convert the local Southern Paiutes to Mormonism, the men chosen lacked experience in the missionary role. Moreover, their very subsistence depended upon their raising bountiful crops in the oasis, thus they monopolized resources belonging to the very people to whom they preached. The Paiute chiefs clearly recognized that sharing oasis resources with the Mormons was the only way to pacify the fierce and hostile travelers on the Old Spanish Trail so that Paiutes could make any pacific use of the oasis at all. Consequently, they even attended services of the local church of Latter Day Saints, and persuaded 50 of their relatives to join them in going through the whole-immersion baptismal rite of the colonists. Paiute motivation for somehow negotiating peaceful intergroup relations was, after all, very strong. As one of the colonists reported,

"some of them come into camp rather suspiciously, as they have been shot at and drove away from the camps of the passing emigrants who have been on the road for years; they will show us the bullet holes and marks they have received from white men, and tell us that they will try and forget it, although their brothers have been killed." (Steele 1855:232).

The Southern Paiutes who managed to increase their peaceful utilization of the Las Vegas oasis by sharing it with LDS Missionaries quickly acquired an added motivation for going through the church's baptismal ceremony. The saints devoutly believed in curing by the laying on of hands during oral prayer. The ritual was highly visible, and one that Native Americans accustomed to shamanistic curing could easily identify as a curing ceremony. Soon after the Mormon missionaries colonized the Las Vegas oasis, and enabled its Southern Paiutes owners to resettle there on a sedentary basis, the latter had an increased need for cures. The Mormons had

clearly brought with them at least one, and probably more than one, lethal contagious disease.

The LDS missionaries arrived at the Las Vegas oasis in mid-June of 1855. By late August or early September, chief Antunip was so sick that his relatives gathered at his dwelling to watch him die. The Mormons "sang and prayed to the Lord for him and told him he should get better." He did improve (Jensen 1926:170). In November, the president of the Las Vegas LDS mission returned from a stock trading trip to Southern California (Jensen 1926:175). Perhaps he contracted some ailment on the coast; perhaps he suffered from a chronic illness. In January President Bringham was seriously ill, and so weakened that he could not even speak very long at Sunday meeting (Jensen 1926:200). At about the same time a woman, baptized as Nancy in November traveled 15 miles from Las Vegas Oasis before she became so ill that she could not travel farther. "The disease with which she was carried off was erysipelas of the head and throat" (Jensen 1926:200). Early in February, the weak but recovering Bringham and a party explored a sector of the Colorado River and Virgin River. "We saw a number of Indians on the route, and talked with them and found them all friendly, but some were very sick and a number had died just previous to our visit" (Jensen 1926:201). Paiute mortality among the Moapa River inhabitants was so high that survivors could not even bury the bodies of their dead. They dumped bodies in a gully (Kelly 1939:160).

By 10 February, 1856, Southern Paiutes who had gone to the mountains after a dispute with the Mormon missionaries at Las Vegas returned to the oasis "being very hungry, and some of them sick" (Jensen 1926:202). It seems clear that the Mormons living near the Southern Paiutes at the Las Vegas oasis had transmitted disease that was more lethal to Indians than to Euroamericans. William Bringham himself may have been the carrier. Once some Southern Paiutes had contracted the disease, their frequent travel from Las Vegas to other oases spread the contagion to the Moapa and Virgin riverine oasis populations. Significant mortality resulted, and the Las Vegas group sought LDS food and laying on of hands and prayer.

Cattle Competition. The cooperative farming villages that constituted the socio-economic mechanism of LDS colonization depended upon irrigation water. Yet, the LDS farmers did not rely solely upon irrigated crops; they exploited the natural resources that once sustained Southern Paiutes with a mixed farming technology. That is, they utilized domesticated animals from the Old World to concentrate scattered resources. Bread made from wheat flour bulked large in the Mormon diet during the early colonization and expansion period. Consequently, Mormons yearned for butter to make their bread more palatable. So Mormon farmers tended and milked dairy cows in order to supply themselves with fresh milk, butter and cheese. Inasmuch as dairy cattle had to be milked twice daily,



their range was restricted. As a result, the impact of their grazing affected primarily the pre-colonization plant assemblages in the riverine oases. One specific victim of Mormon cattle was the native willow, splints from which Paiutes employed in basket-making. No later than the spring of 1862, one Mormon farmer recognized that domestic cattle deteriorated the quality of the native willow, and advocated deliberately planting an eastern species called "basket willow" (Camomile 1862:350). The reported grazing pressure on the native willow, a relatively large and hardy phreatophyte, indicates that by 1862 Mormon cattle had even more adversely affected tenderer plants growing in the riverine and especially the spring-flow oases. Thus, during the initial 15 years of Mormon colonization, domestic livestock had already forced Southern Paiutes to begin to substitute extra-oasis plant resources for those that disappeared from the oases into ruminant stomachs.

Dairy cattle, riding and draft horses, and yoke oxen constituted only one component of Mormon mixed farming. Virtually from the beginning of colonization, the Saints engaged in some range cattle production. At various times, agencies of the LDS Church actively promoted large-scale cattle ranching. Because of the relative scarcity of water for cattle to drink in Southern Paiute territory, the livestock inevitably ranged to the rivers and springs that sustained the major oases. The presence of range cattle as well as dairy cows, horses, mules and oxen materially increased grazing pressure on the willows and other plants that Southern Paiutes had exploited. Thus, the Mormon range cattle industry was another factor which forced Paiutes to transform from semi-sedentary villagers into transhumant refugees and laborers in their own Holy Land.

At the same time, beef cattle also ranged well beyond the major oases, drinking from springs and seeps too small to sustain oases large enough to support semisedentary native settlement. The animals relished, moreover, precisely those domesticated plants such as Amaranths and Chenopods that the natives sowed, broadcast and dry farmed as well as irrigated, plus the more or less domesticated Mentzelia. Available documents indicate that Mormons did not even recognize these plants as deliberately sown and in places even irrigated. In the European and Euroamerican farmer's perception, with its narrow focus on familiar Old World cultivars, these New World cultivars were "weeds." Their radical reduction in numbers and productivity under grazing pressure appreciably reduced Southern Paiute food production. The native people perforce depended more on plant foods such as pinyon nuts that range cattle did not consume.

Suppression of Fire Regime. The Southern Paiutes managed oasis vegetation to an unknown but considerable extent by periodically burning dried biomass. Periodic burning suppressed some kinds of plants, including mesquite seedlings,

and encouraged others, grouped under the term "forbs." These are annual plants that germinate well in soil that has been burned over, and include Amaranths, Chenopods and Mentzelia. In addition, the native grasses, several of which yield edible seeds Paiutes collected, evolved over a period of perhaps 10,000 years of human fires in addition to lightning-caused fires. The Native American fire management of vegetation extended beyond the oases to the grasslands and sagebrush stands. Even the latter responded to fire that consumed dead branches by putting out new green shoots. Fire was one technological tool Southern Paiutes employed to increase plant food production, and upland game animal and bird productivity.

Coming from a forested environment, LDS church members did not comprehend that Southern Paiutes actually managed vegetation by burning it. As ranchers and dairymen, the Mormons valued grass, even dried grass, and did not know that burning off dried biomass actually stimulated both new green growth from fire-stimulated roots of perennial grasses and germination of seeds of annual grasses that evolved under a fire regime. As foresters who culturally valued trees, Mormons perceived as wasteful deliberately set fires that opened hunting meadows for game birds and animals and stimulated grass growth even in semi-arid valleys. Thus, Mormons brought to bear all the influence they could to halt Paiute use of the fire management tool.

Early during LDS colonization of the Virgin River watershed, Mormons began to suppress Southern Paiute vegetational management with fire. In the summer of 1855, the colonists at Harmony on Ash Creek acted: To the Mormons, "The Indians here seem to be possessed with the spirit of burning, for there is scarcely a day but what we can see fires both on the mountains and in the valleys." The colonists "talked to them about burning up the grass," and the natives shifted to setting fire to sage brush. When these fires spread into the grass, the Paiutes pointed out that "it will be very good when the rains come in the fall," (Atwood 1855:224).

The Southern Paiutes, keen observers of the vegetational components of their natural but man-modified environment, knew whereof they spoke. The Mormon tenderfeet did not, but the Mormons had guns, livestock, and large-scale European immigration on their side, in addition to Old World germs and viruses that rapidly diminished the native population. So colonization markedly altered the characteristics of the precontact vegetational mix. The alterations left the Southern Paiute survivors recognizing that the economic value of plants such as the pinyon increased under the stress of survival under foreign occupation. At the same time, the alterations left Southern Paiutes with a lively appreciation for even those plants that once contributed significantly to the tribal food economy, but became as scarce as Paiutes under the lethal onslaught of European and Euroamerican colonization. This

appreciation continues today, and influences Southern Paiute attitudes toward plants in the study area.

#### MINING AND DEPAUPERATION

Brigham Young and his fellow Apostles of the Church of Jesus Christ of Latter Day Saints succeeded in dissuading the great majority of their followers from joining in the Gold Rush to California. Young preached Mormon self-sufficiency, based on mixed farming in Zion. Self-sufficiency involved more than food production, however, because mixed farmers used iron implements that had to be imported from the United States at high cost. Early in 1862, George A. Smith preached against the habit of chewing tobacco among Latter Day Saints. He objected to Mormons spending \$60,000 annually to import tobacco into Zion (Smith 1862:233). Young's struggle to improve Zion's balance of payments involved, therefore, some mining. The LDS colonists tried to set up their own iron smelter and especially during the months prior to the "Utah War" when federal troops marched in Great Salt Lake Valley, a lead smelter.

Both mining and smelting efforts affected Southern Paiute Holy Land and its economic resources. Young dispatched colonists to Parowan to exploit its coal seams, and then to Cedar City to set up Zion's iron smelter there nearer the iron ore deposits. Although the Mormons who undertook to reduce the ore to iron understood that coal constituted the proper smelting fuel, their command of smelting technology appears to have been imperfect. For they resorted to making charcoal out of wood cut in the nearby mountains, and smelting with wood charcoal rather than rock coal. The result was a significant depauperation of the high altitude forests.

Las Vegas Lead. In 1855, Brigham Young selected members of the LDS Church to become missionaries to the Southern Paiutes at the Las Vegas oasis. The new missionaries arrived at that oasis in mid-June, and set about communicating with the natives, and sheltering themselves and growing their food. As Governor of Utah Territory, church leader Brigham Young was already on a collision course with United States officials. The open practice of polygamy by Young and other senior LDS leaders in Great Salt Lake City outraged many eastern politicians. Whether Young and the Twelve Apostles truly believed that the Mormon population could militarily resist United States forces, they at least seriously considered the idea; Las Vegas became one center of a determined effort to locate lead ores and smelt lead to be cast into musket balls.

The Indian mission at Las Vegas oasis may have also been a cover for prospecting for lead. For the Saints at Las Vegas did indeed engage Southern Paiute guides who led them to sources of one or more of their pigments derived from galena.

The Saints also followed Southern Paiute guides to stands of timber on the nearest desert mountain ranges. In 1856, church headquarters dispatched Nathaniel Jones, presumably an experienced lead smelter, to Las Vegas to take charge of a crash lead mining/smelting effort. Mission President William Bringham did not take kindly to yielding his authority over the missionaries, but he did upon direct orders from Brigham Young. The Las Vegas colonists went up into the mountains and felled the few hundred pine trees they had found to make charcoal with which they smelted disappointingly little lead of inferior quality.

Thus, the Mormon colonists significantly depauperated the desert mountains close to Las Vegas. They directly diminished the number of edible nut-producing trees that had supplied the native people of their Las Vegas oasis. They forced the Southern Paiutes to range farther than before in search of pinyon nuts/pine nuts, and clearly demonstrated to the natives Euroamerican disregard for Paiute food-producing trees and religious value of plants. The germs and/or viruses the Latter Day Saints transmitted to the Southern Paiutes in southern Nevada sharply reduced their numbers. Consequently probably none of the native people starved because of Mormon appropriation and destruction of native food resources. Disease killed them before famine could. On the other hand, Mormon behavior presaged even more massive assaults on Southern Paiute food resources in later decades, and helped to produce an enduring Southern Paiute resentment toward Euroamerican resource exploitation techniques that violated Paiute basic religious values and expertise in game and plant resource management in the desert.

## THE UNITED STATES PROGRAM FOR SOUTHERN PAIUTES

When the United States went to war against Mexico in 1846, the national policy makers focused primarily on lands near the Lower Rio Grande (Nevin 1978:22-43). Some looked farther west to the Pacific Coast and Upper California, and a few coveted the isolated northern province of New Mexico. United States troops quickly occupied the Upper Rio Grande Valley while larger forces fought the deciding battles on Mexican territory far to the south (Nevin 1978:129-49; 169-93). Small contingents of troops followed the Gila River trails westward from New Mexico to Upper California to reinforce U. S. naval forces on the Pacific Coast and an irregular force led by John C. Fremont (Nevin 1978:99-108). Southern Paiute territory was clearly not a United States goal when the conflict began.

By 1848, the United States had won an overwhelming military victory over Mexico. Its forces occupied the defeated country, and its diplomats were able to more or less dictate the terms of the peace treaty. The Treaty of Guadalupe Hidalgo provided for the transfer of sovereignty over enormous expanses of territory from Mexico to the United States. The latter annexed the portions of Texas, plus California and New Mexico, that had tempted United States policy-makers two years earlier. It also annexed vast areas between Upper California and the United States simply because they were between the Pacific Coast territory and the national territory in 1848. The victor quite simply desired to insure direct overland access to Upper California.

### THE NATIONAL WAGON ROAD PROGRAM

The United States annexed Southern Paiute territory from Mexico in 1848 without regard for aboriginal occupancy and use rights. Its immediate concern was the establishment of wagon roads between newly acquired Upper California and the existing states. When workers at Sutter's sawmill discovered gold in 1848, they furnished a powerful motivation for a prompt implementation of national policy within Southern Paiute territory. The great Gold Rush of 1849 created a major year round wagon route across Southern Paiute territory.

Gold Rush-Old Spanish Trail Wagon Road. Thousands of Forty-Niners traveled southern routes to the California gold camps. They sailed to Central American or Mexican ports, crossed the continent at relatively narrow points, and sailed north over the Pacific Ocean to Upper California ports. Others, mostly from southern states, rode their mounts or wagons drawn by draft animals to El Paso or Albuquerque and then followed the wagon path pioneered by the Mormon Battalion under Philip St. George Cooke (1878) in 1846 and modified by Col.

Lawrence Graham's command in 1848. They descended the Gila River to the Lower Colorado River and crossed the extremely arid desert to the coast range. Most overlanders chose the central route up the Platte River and across the mountains to new Mormon Great Salt Lake City, and across the Sierra Nevada.

The Central Route suffered from one serious inconvenience for travelers. The high altitude passes in the Sierra Nevada and other mountain ranges were typically blocked by deep snow during the winter. For that and other reasons, some Forty-Niners changed direction at Great Salt Lake City to take a compromise path to California. Turning southern to Utah Lake and fledgling Provo, the travelers continued southward to Mountain Meadow. They pioneered a travel corridor that parallels the proposed Intermountain Power Project transmission line. At about Mountain Meadow, the Forty-Niners came into the fairly well-marked "Old Spanish Trail." They usually followed it through Southern Paiute territory via the branches of the Virgin River and Las Vegas to the Amargosa Springs and Mojave River and on across Tejon Pass into coastal Southern California.

Wagon Road Travel Impacts. Beginning in 1849, the United States national wagon road policy significantly affected the Southern Paiute people. This is not to say that the federal government immediately implemented a road-building policy. It took about a decade to get around to improving the wagon ruts that citizen wagons wore into Southern Paiute soil. The federal government simply followed its voting citizens into Southern Paiute country. Like the Forty-Niners and their successors on the trail, the federal administrations assumed that their annexation of the area from Mexico conferred upon United States citizens a right to travel across Southern Paiute land, drink Southern Paiute water, shoot Southern Paiute game animals, catch Southern Paiute fish, and burn Southern Paiute trees and shrubs. U. S. citizens did all of those things despite the fact that no representative of the federal government had negotiated any cession of aboriginal title to the United States. United States citizens established by military force a new major transportation corridor across Southern Paiute territory, significantly increasing non-Paiute exploitation of aboriginal natural resources.

Greatly increased frequency of travel along the new national wagon route effectively interdicted Southern Paiute habitation on or near the road. Trigger-happy travelers made the road too dangerous for Southern Paiutes to attempt to reside or garden near it. So, the national wagon road program resulted in some diminution or at least rebuilding of housing away from the dangerous path. It split Southern Paiute utilization of the riverine oases along the Virgin River, the Santa Clara and Moapa into up-stream and down-stream sectors. It handicapped Southern Paiute hunting for game in the oases near the road, while travelers tended to kill all of the game that wandered within sight of the road. Non-Indian travel

reduced Southern Paiute fishing in the streams close to the road. While travelers no doubt fished in Southern Paiute streams, few of them much liked the flavor or texture of fish from the desert streams. Consequently, traveler fishing probably did not significantly reduce fish stocks in the oasis waters. Emigrant cutting of mesquite and other trees for fuelwood without doubt significantly changed the vegetation distribution within walking distance of the wagon road, but by an unknown amount.

Biological Invasion. Many of the Forty-Niners on the various overland routes to California carried with them cholera. In fact, many Forty-Niners died from the effects of cholera and were buried beside the new wagon roads. On the Gila River Route, Forty-Niners transmitted cholera to the Gila River Pimas and Maricopas (Bartlett 1854:II:241). Cholera is a water-transmitted disease. Probably Pimas and Maricopas contracted it by drinking from the same ditches into which they ran irrigation waters for the convenience of travelers.

Forty-Niners who followed the Central Route to California also suffered from cholera. They left a number of water sources contaminated, so that the disease recurred in the following summer and sporadically after that. It is not certain that the Forty-Niners transmitted cholera to the Southern Paiutes. It appears very likely that travelers in succeeding seasons did contaminate Southern Paiute water supplies with cholera so that these people suffered some increase in mortality and especially morbidity. Cholera recurred among Plains Native Americans south of the Missouri River in 1851, and influenza spread up that stream during the summer (Jarrell and Hewitt 1937:82).

The rapid depopulation of Southern Paiutes by Old World contagious diseases transmitted by Euroamerican travelers may have begun in 1848. Emigrants on the Platte River Oregon Trail in that year transmitted measles to the Snakes. They in turn transmitted it to the Plains Crow (Denig 1961:185). Evidently LDS converts traveling the same route carried the contagion to the Great Salt Lake Valley, and perhaps directly south to Utah Lake. In any event, measles spread to the Utes in that region in 1849 (Anderson 1942:101). Given the highly contagious nature of the measles virus, and the known transmission of the disease to several Native American ethnic groups in 1848-1849, it seems likely that the virus spread to the Southern Paiutes.

The 1848 measles epidemic may have decimated the Kaibab Band. A photographer with the second Powell expedition down the Colorado River through Grand Canyon recorded Southern Paiute oral history of the event. E. O. Beaman made a trip from Kanab, Utah, south through aboriginal Kaibab country to the North rim. He hired Southern Paiute guides who appeared not well acquainted with the terrain. Near the rim about 75 miles south of Kanab, they camped in a small valley. Beaman

reported that his guides told him that the place-name translated "The Valley of Death." Formerly, it was a camping-ground, but measles broke out and killed 100 persons within a few days. The surviving Paiutes abandoned the valley, and thereafter they avoided it unless sorely pressed for water (Euler 1966:90; Beaman 1874). The avoidance of the area where many ghosts of the deceased were likely to lurk no doubt accounted for Paiute "unfamiliarity" with the zone. Unfamiliarity resulted from avoidance behavior.

Overland traveler transmission of major viral killers continued. A wagon train brought smallpox into Great Salt Lake Valley in 1856 (Young, Kimball and Grant 1856:181; Matthews 1857:160). To the disgust of Brigham Young and other LDS church leaders, some Saints did not take quarantine measures seriously. Consequently they spread the virus (DESERET NEWS 17 Dec. 1856:325). Almost certainly the virus spread from Euroamericans to Native Americans. The 1856 smallpox epidemic may be the one to which the botanist Edward Palmer referred as having decimated Southern Paiutes (Euler 1966:90; Heizer 1954:8). Southern Paiutes in the core food production zone of riverine oases along the Virgin River system streams suffered heavy losses, as mentioned above.

Whatever mortality Southern Paiutes suffered in 1848, 1849 and 1856 from Old World pathogens transmitted across the plains and western desert by Euroamericans diminished their exploitation of natural resources at the very time Euroamerican travel interdicted their access to some such resources. Thus, Euroamerican invasion may not have immediately threatened the Southern Paiutes with starvation because of food losses. The natives probably recognized that the Europeans carried lethal diseases among them. They perceived and bitterly resented Euroamerican exploitation of their game, their fish, their field and their water resources.

Fort Mojave - 1859. Federal expeditions began to seek a feasible transcontinental railroad route west from the Upper Rio Grande Valley in 1851. Not until 1858 did civilian emigrants headed for California attempt to follow the national wagon road opened by Edward F. Beale. The Mojaves, correctly interpreting the significance of wagons carrying women and children into their valley, attacked the careless lead emigrants. All trains on the road between the Rio Grande and Colorado River turned back to Albuquerque. The federal government could not tolerate this successful Native American challenge to the free movement of voting citizens within territory over which the government claimed sovereignty (Udell 1868).

In 1859, United States troops stationed in California marched into Mojave Valley. Challenged by Mojave warriors, the troops demonstrated the superiority of firearms over bows and arrows and warclubs. Bullets decimated the ranks of the



special class of Mojave Brave Men, physically and psychologically trained as shock troops for hand-to-hand combat. In order to insure that Mojaves would remain peaceful and not interfere with the transit of civilian travelers, the Department of the Army established Camp Mojave. This new post was located in Mojave territory. Its supply lines necessarily crossed Southern Paiute--mostly Chemehuevi--desert territory. Federal troops became a continuing resident population among Mojaves and transients across Southern Paiute lands (Kroeber and Kroeber 1973:20-32).

The Chemehuevis began to harass Euroamerican travelers on the Los Angeles-Fort Mojave road during the summer of 1864. Perhaps Southern Paiute resentment toward colonists in their Holy Land spilled over to the Mojaves who had remained peaceful and allied to federal troops after 1859. At any rate, in the spring of 1865, Chemehuevis killed a Mojave woman collecting seeds near Topock at the south end of Mojave Valley. The Mojave relatives of the slain woman retaliated, and a Mojave-Chemehuevi War began (Kroeber and Kroeber 1973:39). The commander at Fort Mojave, gave at least tacit approval to the Mojave vengeance raid that initiated the war.

Despite the intertribal conflict, large parties of Paiutes could travel across Mojave territory to Fort Mojave. Brevet Lt. Col. William R. Price recruited a Southern Paiute chief to accompany him during a search-and-destroy mission in Walapai country in the fall of 1867 (Senate 1936:62). About a year later, in early October of 1868, a group of 50 Southern Paiutes visited the post (Senate 1936:77). Price attempted to embroil the Southern Paiutes in hostilities with the Walapais, to hasten the defeat of the latter during the Walapai War. By mid-1869, some Chemehuevis settled across the Colorado River from the Colorado River Reservation (Kroeber and Kroeber 1973:46n.75). Chemehuevis attempting to exploit riverine horticultural resources remained very much at a risk from Mojave war parties. As late as 15 October 1870, warriors of the two tribes battled each other within nine miles of Fort Mojave (Kroeber and Kroeber 1973:45).

In 1871, an officer of the Topographical Engineers engaged in exploration of the region intervened. Taking a Mojave chief on a trip with him on the Colorado River, Lt. George M. Wheeler (1872:29) arranged a meeting between the Mojave leader and a Paiute chief. He advised them to negotiate, and they arranged "an amicable adjustment." Bellicose Mojave oral history attributed the negotiated peace to the Mojave's going to the government to have agents write letters to the Chemehuevi to be friends (Kroeber and Kroeber 1973:46). The cultural bias in the tradition is readily apparent: Chemehuevis were in 1871 only beginning to learn to speak English and certainly none could then read it.

Termination of the Mojave-Southern Paiute conflict of

1865-1871 established the "pax Americana" among the tribes in the region. Euroamerican socio-economic domination, increasing since 1852 among Southern Paiutes, could hardly be questioned after 1872. Euroamerican colonization and Southern Paiute population decline over two decades made the outcome plain to everyone living in the region.

#### MOUNTAIN MINING URBAN FRONTIER

Forty-Niners headed to California established relatively urban mine camps that quickly generated truly urban settlements at Sacramento and San Francisco. Prospectors quickly discovered placer gold deposits much greater in extent than the initial sawmill zone. The overland migration reached such proportions, however, that the California gold placers failed to satisfy the migrants who did not stake out profitable claims. Very quickly, prospectors began to seek precious metal ores in the mountains between California and the Plains. By 1852, prospectors had found placer gold at what became Virginia City in northern Nevada. That discovery confirmed the theory that mineral riches could be found in the broad mountainous belt between the Plains and California.

Eldorado Canyon. One early expansion of the mining frontier depended on mechanized steamship traffic from San Francisco Bay to the mouth of the Colorado River, and steamboat transportation upriver. Soldiers discovered commercial grade ores, in terms of cheap water transport to San Francisco smelters, in El Dorado Canyon north of Mojave Valley as early as 1859. Prospectors promptly filed claims and began mining. Mining activity and settlement fluctuated in this bleak, hot region. Southern Paiute employment opportunities in mines and mills also fluctuated through the years. The War of the Rebellion period saw 500 men living in the canyon (Scrugham 1935:I:611).

In 1875, "several men" worked the El Dorado Canyon mine, but the mill was shut (Pioche Daily Record, 5 June 1875:3). Thus it seems doubtful that any Southern Paiutes labored in the canyon at that time. By 1887, El Dorado Canyon was humming with mining activity. The Southern Pacific Railroad reached Yuma downstream a decade earlier, purchased the river steamboats, and furnished transportation economical enough to enable profitable milling of lower grade ores in El Dorado Canyon than ever before (Dobyns 1981:135; Myrick 1975:19). When numerous Southern Paiutes gathered at Las Vegas for a mourning ceremony for their dead in August of 1887, those working at El Dorado Canyon joined in the ritual (Pioche Weekly Record, 7 Sept. 1887:3).

Interethnic relations were not very good, and violence took a toll of both Euroamerican and Southern Paiute lives. In

1889, a Southern Paiute reportedly killed a mail rider. Pressure on the Native Americans prompted them to require the man's brother, Ahvote, to slay him, and bring in his severed head as proof of the execution. "Since that time Ahvote has been morose and sullen and lived apart from the tribe."

After 8 years of psychological stress over his forced fratricide, Ahvote picked up his rifle early in May, 1897, and exacted terrible vengeance. The Wall Street Mine was 13 miles from the riverside El Dorado Mill, and other mines similarly distant. Southern Paiutes customarily hitched rides on the ore wagons traveling between mines and mill. When two teamsters failed to pass down the canyon, other men searched and discovered that they had been shot off the seats of their wagons. Assembling at the mill, excited miners issued an ultimatum to the resident Southern Paiutes: bring in or kill Ahvote or they would kill all Paiutes they could reach. Half a dozen tribesmen set out on Ahvote's trail. They found that in addition to the two teamsters, Advote had shot and killed two miners, an assayer-mailman, two mine owners, and three other men whose names were not even known to other residents of the anomic mining settlements. Placed in the same position as Ahvote had been eight years earlier, the Southern Paiute possemen executed Ahvote and pacified the Euroamericans (Pioche Weekly Record, 20 May 1897:4).

Potosi - 1856 and 1861. Individuals, often loosely organized into associations, advanced the metal mining frontier. They organized themselves into mining districts to provide a form of local government that included records of claims to surface and subsurface rights, and mechanisms for adjudicating disputes. Federal officials appeared on the mining camp scenes only after the initial colonization and organization occurred. Territory and derivative county government with administrators, legislators and judges followed colonization. Only federal officials attempted to preserve Native American rights to land, water and other natural resources. Inevitably, they always arrived too late to control local events on the mining frontier.

That frontier spread into Southern Paiute country no later than 1856. Brigham Young dispatched a special task force from Salt Lake City to the fledgling Las Vegas Mission to mine lead from nearby deposits. One of the missionaries evidently sent Young ore samples from surface deposits the Las Vegas Paiutes quarried to obtain skin painting pigments. Trying to create a munitions industry in preparation for the Utah War, Young sent loyal Latter Day Saints to smelt lead for bullets.

The behavior of the Mormon task force was representative of that of later successful prospectors. They hired local Southern Paiute guides to lead them to pigment deposits already known to the aboriginal people (Jensen 1926:271; Paher 1970:265). The Mormon lead miners felled apparently all or

nearly all of the pine trees they could find on nearby peaks in order to try to smelt their lead ore (Jensen 1926:261). Thus, they initiated depauperation of the desert-margin forests of Southern Paiute land in 1856.

Most significantly, the Mormon lead miners employed Paiute laborers. The ore deposits the Saints decided to mine were located high on a steep slope. Rather than wait until they could build a road to the mine, the Mormon miners paid local Paiutes to climb up to the mine, and carry down packs full of ore to the Mormon wagons that hauled the ore to the crude adobe smelter. The Paiutes appear to have been imbued with an aboriginal work ethic, and a strong desire to acquire Euroamerican clothing and food. They performed arduous physical labor carrying the heavy lead ore down the mountainside in return for scant payment. They received only the food they consumed while working--and the Mormons themselves appear to have subsisted on a largely cereal and vegetable diet--and some cast-off Mormon clothing (Jensen 1926:273).

Whatever motivated the Las Vegas Paiutes to work for the Mormon lead miners in 1856, they set the pattern for Paiute response to the Euroamerican mining frontier. Wherever Euroamericans would allow them to work in the mines or mill or mine camps, Southern Paiutes willingly performed hard physical labor in return for food supplies and minimal additional recompense. It seems that Paiute women must have played a major role in the decision to exchange physical labor for processed agricultural foodstuffs. Wheat flour clearly became a dietary mainstay just as soon as Southern Paiutes could obtain it in sufficient quantity. That meant that native women had to spend markedly less time with heavy milling stones pounding maize kernels and other traditional foods into mush or flour. Whatever the taste factors involved, machine-milled wheat flour became a major desideratum among post-contact Southern Paiutes.

Mormon lead-mining attempts were abortive. After smelting a few hundred pounds of near-surface ore, the Saint in charge concluded that lead content diminished so rapidly that his men could not earn what he considered an adequate daily wage in the enterprise. The miners returned to Salt Lake City with their smelted lead, leaving Las Vegas on 18 February 1857 (Jensen 1926:269). The Mormon missionaries at Las Vegas persisted for several more months, but in the aftermath of the Utah War, the Church abandoned its settlement at Las Vegas. In 1858, Las Vegas was a very convenient way station for mail carriers, wagon train travelers, and again a risky habitation for native Southern Paiutes.

In 1859, miners discovered very rich silver ores at Virginia City. The quest for riches shifted, therefore, from gold to silver. A large-scale rush of miners and would be

miners quickly populated the Virginia City sector of Northern Nevada. Recognition that Euroamericans could become millionaires mining silver as well as gold motivated renewed prospecting for silver deposits in the mountainous region between California and the Plains. In 1861, prospectors confirmed that the ore body from which the Mormons succeeded in smelting a few hundred pounds of lead also contained lode silver. A rush of miners soon created the Potosi silver mine camp (Orton 1890:42). The precious metal deposits at Potosi proved to be small, and activity waned about 1863. Thus, one of the earliest mine camps in Southern Paiute country became a ghost town early on (Scrugham 1935:I:613).

Pioche-1863. When the War of the Rebellion began in 1861, both Union and Confederate officials avidly sought bullion to finance their respective war efforts. The Union managed to retain the state of California, and Utah Territory. Prospectors, mostly from California, fanned out through the mountainous portion of western Utah seeking more precious metal deposits. The importance of Nevada Territory silver to the Union budget led to the Union Congress admitting Nevada to statehood in 1863. Even during the stress of war, the Union Congress refused to admit Utah Territory because of the conflict in moral values over Latter Day Saint polygyny.

In 1863, Paiutes who had been quarrying pigments from ore deposits in Paranayi subtribe country guided Mormon missionaries to their quarry (Paier 1970:291). Very quickly non-Mormon miners rushed to the deposit and stake out claims. San Francisco capitalist F. L. A. Pioche purchased several claims in 1868 and had a smelter built. A new labor immigration that year established the town of Pioche. The ore deposits proved to be deep enough to sustain large-scale mining operations for a number of years. The mine came to be regarded as the richest in southern Nevada. Pioche itself became renowned as the most lawless mining camp in Nevada--and Southern Paiutes lived in a Native American ghetto at the edge of the city (Palmer 1958:355). Following the Potosi precedent set in the 1850s, Paiutes worked at such jobs as the Euroamerican dominant group allocated them.

Clover Valley - 1860s. The Euroamerican colonization of Pioche and other mine camps founded soon after in Paranayi subtribe territory created instant demand for fresh garden produce, hay, grain, hams, bacon, slaughter pigs and poultry, cheese, butter, etc. (Palmer 1958:355). The Southern Paiutes who moved to or stayed at the new mine camp to work whenever allowed to do so in exchange for food and clothing (and eventually cash?) augmented that demand rather than supplying it. Euroamerican miners had no appetite for such traditional Southern Paiute foods as Chenopod or Amaranth seed meal. They may have disdained Southern Paiute green corn, squash and beans if such produce was offered for sale in Pioche. On the other hand, Latter Day Saint farmers shared the general Euroamerican

farming/gardening cultural tradition and economic motivations even though they differed in religious and moral convictions. Consequently, some of them set about supplying the mine camp urban market with produce and cereals.

The primary miner colonization of Paranayi subtribe country generated a secondary agricultural colonization by LDS farmers. Clover Valley was much closer to the Pioche urban market than the riverine oases of the Virgin River system. It afforded fertile soils and some irrigation water. Consequently, Mormon farmers colonized Clover Valley to grow produce to sell to the relatively affluent Pioche miners. They hesitated no more than the miners to invade Southern Paiute territory and appropriate its natural resources.

Panaca - 1865. Southern Paiute resistance to colonization of Clover Valley by Euroamericans persuaded at least some Euroamerican families to move to Meadow Valley beginning in 1865. More families migrated to that valley in 1866 and 1867. These farmers built a fort-style structure of sod cut from the meadow about a mile to the south of the main spring in the valley. This they called Panaca, assuming that they were using a Southern Paiute term panacker meaning "silver ore" (Scrugham 1935:I:602). Panaca quickly became a supply center for mine camp residents in southern and central Nevada. The colonists seized Southern Paiute domestic and crop irrigation waters and arable lands, thus further reducing the food production capacity of those who survived Old World diseases.

Paranayi Subtribe. The Southern Paiutes who exploited the area colonized by Euroamericans at Pioche and Clover Valley apparently belonged to the group self-labeled Paranayi (Kelly 1934:554). They ranged originally from this northern area to the Virgin River oases on the south, and respected and recognized the same band chief (Fowler and Fowler 1971:1014). The Euroamerican mine camps and farming zones established in Paranayi subtribal territory during the 1860s converted key upland sources of Paiute domestic water to Euroamerican uses. At best, Southern Paiutes who labored at the mines and mine towns managed to continue to satisfy their need for domestic water from the limited number of springs open to them. At worst, the Paranayi people suffered casualties when Euroamericans shot and killed them "under circumstances which rendered the act only a little better than murder" (Sale 1865:152-153).

Colonization of Paranayi lands by miners led to the multiplication of wagon roads that connected the new Euroamerican settlements with others located in all directions. Travel from Pioche and Panaca to southern Nevada and the Lower Colorado River tended to follow upper Meadow Valley Wash. As in earlier decades, frequent Euroamerican travel along that route discouraged Paranayi habitation and gardening along the road. Euroamerican travelers tended to

shoot whatever game birds or animals they encountered, and diminished the supply available to Paiute hunters. Aboriginal Paranayi lands were Euroamerican-occupied territory by the end of the War of the Rebellion.

Hiko - 1865. Another Southern Paiute familiar with a body-painting pigment quarry led a Euroamerican to it, leading to a rush of miners that created the town of Hiko. Reportedly, the very place name was taken from a Paiute term meaning "white man's place" (Paheer 1970:301). A rush early in 1866 created the settlement. The mineral wealth extracted was for a time sufficient to support a population at Hiko large enough to enable it to seize the county seat of new Lincoln County from 1867 to 1871. Then it died.

Crystal Spring - 1865. Domestic and industrial water supplies both were crucial to either Southern Paiute or Euroamerican mining settlement in this arid region. Paranaui Paiutes for unknown generations depended upon the flow from what Euroamericans named Crystal Springs when they colonized the zone in 1865. The state legislature made the Crystal Springs camp the provisional seat of Lincoln County when it created that unit in 1866. The settlement contained too few voting citizens to qualify, however, so Hiko became the first county seat in 1867.

Logan City - 1865. The "discovery" that led to founding Logan City in 1865 again demonstrated Southern Paiute pre-colonization pigment quarrying, for "an old Indian" led Euroamerican prospectors from Austin to a rich silver ore ledge on Mount Irish. The exploring party filed locations in March and went to Panaca for supplies. Returning in June to begin working the ledge, the miners were chased away within a few weeks by hostile Native Americans (Paheer 1970:301). A post office was established at Logan City in 1867, by which time the mining district contained a few hundred colonists. By 1868, however, the district already began to decline, and by 1869 the shallowness of the rich ores led to the virtual abandonment of the district (Paheer 1970:303).

Another mill was installed two miles west of Logan City. This Crescent Mill managed to keep working into the 1870s after the expensive Hyko Mining Co. mill closed. It did so, apparently, by custom-processing ores extracted by chloriders (Paheer 1970:301; Wheeler 1872:44).

Paranayi Subtribe. European settlers at Hiko occupied part of the core of what has been considered territory of the Paranayi Southern Paiute (Kelly 1934:544). Those northwesternmost Southern Paiutes appear to have shared in the tribal decision to achieve peace with aggressive Euroamericans by sharing mineral, water, fuel and other natural resources the latter coveted. The strategy did not achieve a long-term successful adjustment in aboriginal territory. Intergroup



relations frequently deteriorated into bloodshed. In 1867, for reasons unknown, Indians killed with arrows two young men walking along the wagon road toward California about six miles outside Hiko. A third man was wounded, but outran the warriors to reach Hiko. Euroamericans "apprehended" two of those considered responsible for the killing, and hanged them.

Afterwards, the Euroamericans thought that the local Native Americans threatened to take revenge. The colonists "gave them no chance for retaliation" but raided two of the larger camps in the Pahrangat Valley at daybreak. The Euroamericans slew 17 people at a camp where colonists later built Alamo, and 17 more people at another camp farther up the valley (Scrugham 1935:604).

Members of the Paranayi Division fought with colonists again in January and February of 1875. Ten years into the mining era, the Paranayi laborers fled south of their aboriginal territory to live along the Lower Colorado River (McClain 1875:3). Their choice of refuge reflected not only the continued geographic isolation of the Colorado River gorge, but also the aboriginal pattern of reliance on the riverine oases. The Paranayi subtribe families exploiting natural resources in Pahrangat Valley had always ranged to the Moapa River and perhaps the Colorado River to garden or to exchange commodities with the gardening families living there more permanently (see Ch. V:263-268).

Grand Gulch - 1868. Another Southern Paiute in 1868 led a Mormon to yet another body-pigment quarry. Unlike the silver-producing ore bodies revealed in some number, this was a copper deposit that became known as the Grand Gulch Mine. Initially, LDS church members living in the Virgin River oasis 75 miles north visited the copper deposit sporadically. They packed in their tools and supplies on pack mules following Southern Paiute trails. Still claiming water and grass as their property, the Native Americans demanded guns and other commodities in exchange for information about springs, etc. (Adams 1955:396). In 1870, the Mormon miners began to explore to find a feasible wagon road route to the deposit. In 1873, large-scale development began (Belshaw 1979:420). A post-office was not established at the mine camp, though, until 1916 (Barnes 1935:186).

Ivanpah - 1860s. The Clarke Mining District regulated claims located in both Nevada and California. Early miners employed Southern Paiute women to carry water for their use, and began to hire some men to work in the mines. By 1871, a 5-stamp mill was under construction.

New York District. Like the Clarke district, the New York District included lands in both California and Nevada. It had the advantage of an easy haul to the Lower Colorado River.



Yellow Pine District. By the 1870s, the early Mormon Potosi strike had been reincarnated as the Yellow Pine Mining District. The pine timber at the upper elevations of the Spring Mountains endowed it with relatively abundant fuel.

Timber Mountain District - 1869. Also in the Spring Mountains northwest of Las Vegas, the Timber Mountain District was created in 1869. The veins consisted of galena and sulfide of silver (Wheeler 1872:52-53).

Southeastern District - 1870. On the western slope of the Vegas mountains, near their northern end, an 1870 ore discovery resulted in creation of the Southeastern Mining District. The ore lay a dozen miles from water, although fuel wood was plentiful (Wheeler 1872:45).

All of these southern Nevada mining districts attracted Euroamericans into Southern Paiute ancestral territory. They changed the water budget, exploited natural resources Southern Paiutes had used, but provided alternate foods.

Typhoid Fever. The nucleated settlements of the miners in Southern Paiute country exposed the native residents to yet another water-borne and fly-vectored Old World disease. Typhoid was carried to Virginia by the very earliest English-speaking colonists in North America. One carrier apparently brought the disease across the Atlantic, and then transmitted it to fellow colonists (Jones 1963:9). Tidewater Native Americans were also at risk from the water-borne pathogen.

Typhoid fever continued to be a frequent ailment of Euroamericans. It was regarded as characteristic of mine camps in the mountain mining frontier zone. Late in August of 1875, Pioche had "several sick" (Pioche Daily Record, 22 Aug. 1875:3) with apparent typhoid. So the disease appears to have become epidemic as well as endemic. In eastern California at this period, for example, a twenty year old Euroamerican bride came down with the typical typhoid of the time and place. She recovered, thanks in part to three weeks of careful nursing by her solicitous husband (Trego 1959:17-18). The prognosis was not nearly so favorable for Southern Paiutes who contracted typhoid fever from contaminated water sources or from fly-contaminated food. Even among working Paiutes of the period, food supplies appear to have been less stable and dependable than among Euroamericans. The native population lacked a pre-contact nursing tradition and skills. There can be little doubt that Southern Paiutes living and working at the mine camps suffered a significant typhoid fever mortality.

Peaceful Symbiosis. The Southern Paiutes guided Euroamerican prospectors to most of the ore bodies where economically successful mining operations were conducted in southern Nevada. Those Paiute guides or their relatives had

seen or heard about the Latter Day Saint lead mining attempt at Potosi in the mid-1850s. They must have known, therefore, that Euroamerican colonization of Paiute territory was likely to follow disclosure of the location of native pigment quarries. That is to say that the Southern Paiutes appear to have encouraged Euroamerican colonization in their Holy Land, beginning no later than 1863.

The reasons for Southern Paiute encouragement of Euroamerican colonization are not clear. The natives had suffered several decades of depredations by Euroamerican travelers. The threat of random shooting had increased very markedly since the 1849 Gold Rush. The temporary LDS Church mission at Las Vegas had demonstrated that Euroamerican colonists saved native lives because they mediated between Southern Paiutes and hostile travelers. Perhaps that demonstration was all the Southern Paiutes needed to decide to attract Euroamerican colonist-mediators into their territory. In any event, the Southern Paiutes did attract Euroamerican settlers by showing them pigment quarries, and they did at once go to work for the Euroamerican colonists to the extent the latter allowed them to do so.

Intergroup relations in the mining communities were not always smooth and amicable. At least some Southern Paiutes continued to hold out the bait of additional ore body revelations until nearly the end of the nineteenth century. Indeed, a Southern Paiute finally revealed in 1896 the location of a clearly highly prized and long-kept-secret turquoise quarry (Paheer 1970:284). Other Southern Paiute individuals seem to have extended the bait without delivering any new discoveries of economic ore bodies. Their apparently individualistic efforts at personal betterment backfired on occasion, to the extent of execution or murder by disappointed prospectors (Pioche Daily Record, 24 June 1874:3).

Despite some violent confrontations between Southern Paiutes and Euroamericans, the former generally succeeded in securing peaceful relationships within their Holy Land. The pacific goals of Southern Paiutes in their strategy toward Euroamericans can be highlighted by contrasting the contemporary reaction of the Northeastern Pai people across the Lower Colorado River to the initial thrust of the mining frontier into their territory. Like Southern Paiutes, the Northeastern Pai initially more or less welcomed Euroamerican prospectors and miners into their aboriginal homeland in 1863. In 1865, Euroamericans opened a toll-road across Pai country between the mine town of Prescott with Union Fort Whipple nearby and the Lower Colorado River port called Hardyville. In the spring of 1866, a Euroamerican freighter on the wagon road murdered one of the three Subtribal chiefs of the Pai (Arizona Miner, 25 April 1866), along with several of his relatives. The chief carried at the end of a stick where it was quite

visible a good conduct pass signed by a military officer at one of the army posts in the region.

The murder triggered the Walapai War. The western bands of Northeastern Pai set out to shut down traffic over the wagon road from the Colorado River to Fort Whipple. The United States employed regular United States cavalry units stationed at Fort Mojave and Fort Whipple on search-and-destroy missions that eventually wore down the Pai capacity to wage effective war. Still, it took the cavalry three years to win the war of supply attrition. The cavalry won skirmishes when troopers managed to surprise Walapais collecting seeds or digging agaves in the open. The Native Americans won battles when troops attempted to oust them from prepared mountain-valley positions protected by stone breastworks (U. S. Senate 1936).

The Southern Paiutes knew about the Walapai War. In fact, one group of Shivwits Band refugees lived among the Walapais during the hostilities. Its warriors fought with the Walapais. The main war leader of the Walapai traded Navajo blankets and other commodities to Moapa Paiutes for guns and munitions. If the Moapa Band Paiutes did not obtain those weapons from Mormon settlers, they must have purchased or stolen them in the various mining camps in Southern Paiute country. The Pai war chief also traded Navajo textiles to Chemehuevis for horses (Walker 20 Aug. 1954:7-8). He never succeeded in obtaining enough mounts to enable his warriors to confront the cavalrymen on an equal basis.

Aware as they were of the progress of the Walapai War, the Southern Paiutes appear not to have undertaken any similar armed resistance to Euroamerican invasion of their homeland. They had been subjected to Euroamerican invasion and regular travel beginning in 1827, whereas the Pai had seen only occasional Euroamerican parties prior to 1851 (Sitgreaves 1853). Apparently Southern Paiutes who committed themselves to revealing pigment quarries to Euroamericans in order to lure them into Southern Paiute country reconciled themselves to the long-range consequences. In 1875, the Walapai consciously recognized that the price of remaining in their ancestral Holy Land was to work at coolie labor for coolie wages. By that time they had been militarily defeated, held under close military supervision at a one-mile square reservation, forcibly removed from their homeland, and fled back to it. Southern Paiutes appear to have made the same decision by 1863, without fighting a war and without having been forcibly removed from their Holy Land.

The Shivwits Band of Southern Paiutes seem to have considered forcefully resisting the invasion of miners. Their alliance with the Walapais during the Walapai War may have influenced them to try to delay mining in Southern Paiute territory. In any event, in August of 1869, Shivwits warriors led by Chief Toab slew three Euroamerican prospectors who

crossed into the core of Shivwits territory via Separation Canyon from the Lower Colorado River (Dobyns and Euler 1980a:88-94; Belshaw 1979:409-10, 417-21; Rambeau and Holmes 1976:113). Ten months later, Toab and seven warriors confronted three Mormons returning to St. George after a stint of mining at the Grand Gulch copper deposit. The part-time Mormon miners had then been following native trails, using pack animals, between riverine settlements and mine. The Southern Paiute aboriginal owners of the area "withheld for the purpose of extorting guns and other pay" information about watering places and a feasible wagon road route (Adams 1955:396). Moreover, "they claimed both grass and water as their private property."

The three Mormons were armed with four pistols. They stood off the eight Shivwits armed with four rifles and four bows with arrows through a long night of negotiation. One Mormon spoke enough Paiute to sustain the conversation. He knew that the three prospectors had been "killed by members of the Paiute tribe headed by Chief Toab." He claimed that the prospect of government gifts to be issued at St. George within a short time motivated Toab and his warriors to allow the three Mormons to live. The LDS miners promised not to inform Indian Office representatives of the confrontation if the warriors laid down their arms. They did, and that appears to have ended organized Shivwits resistance to Euroamerican colonization (Adams 1955:398).

The Grand Gulch Mine became a large-scale ore extraction operation. Euroamerican cattlemen turned cattle to graze on Shivwits territory, drastically diminishing the Southern Paiute resource base. No longer could they garden at Log Spring, where physical remains of earlier habitation attest to pre-conquest horticulture. Range cattle would consume any crops planted there, just as they consumed any sown Amaranths, Chenopods or Mentzelias. Chief Toab was reduced by the early twentieth century to begging for food from cowboys who occupied his ancestral homeland (Belshaw 1979:420-21). Euroamerican occupation and the pattern of natural resource concentration with range cattle made Shivwits territory minimally habitable by the aboriginal owners. Most Shivwits appear to have emigrated in order to survive, but the conservative chief, Toab, stubbornly remained in his tribal Holy Land even though doing so reduced him repeatedly to near-starvation and begging the occupying Euroamericans for food.

#### CONTINUED LDS COLONIZATION IN CORE RIVERINE OASES

Even after the United States forcefully asserted its jurisdiction over members of the Church of Jesus Christ of Latter Day Saints in 1857, that denomination managed to maintain a significant degree of independence of action for

another decade. The civil war between Union and Confederate states postponed for four years any decisive imposition of federal authority in Utah Territory. The Saints proceeded, therefore, with their colonization strategy almost as though Deseret were politically independent.

Pipe Springs - 1863. In 1863, James M. Whitmore of St. George built a dugout home near Pipe Springs in the Arizona Strip. He drove his flock of sheep and cattle herd south from the Virgin River town to take advantage of the pasturage in aboriginal Kaibab Paiute country (Stoffle and Evans 1976:180; Olsen 1965:13).

Moccasin Spring - 1863. That same year, Mormon settlement spread to Moccasin Spring, four miles north of Pipe Springs. The LDS cattle ranching thrust carried Mormons to key highland water sources of the Kaibab people.

Short Creek - 1863. William D. Maxwell settled at Short Creek in the same year, 1863. This stream lies 25 miles west of Pipe Springs (Olsen 1965:13; Woodbury 1944:166).

Kanab Creek - 1864. In 1864, LDS colonists set up a cattle ranch at the site of present Kanab, Utah. This also lay within Kaibab Band territory. About the same time Mormon colonists pushed south into Kaibab territory, Union volunteer troops were rounding up Navajos farther to the southeast. The defeated Navajos were marched eastward to be interned at Fort Sumner, New Mexico, on the upper Pecos River. Some Navajos escaped the troops, however, by venturing farther northwest into aboriginal Southern Paiute territory. In 1865, some of them raided the new Kanab settlement and the Pipe Springs ranch (Olsen 1965:13). Mormons there allowed Kaibab Paiutes to irrigate gardens on Kanab Creek; the Paiutes served as sentries and allies against raiders (Stoffle and Evans 1976:182).

Navajo raiding continued. In May of 1866, LDS authorities in St. George ordered all settlements east of Pipe Springs abandoned. By July, the refugees had moved to St. George and Cedar City (Olsen 1965:14). Two years later, the LDS militia had dispatched a contingent to Pipe Springs (Olsen 1965:15). The federal government negotiated a treaty of peace with Navajo leaders in 1868, however, and allowed the internees to return from Fort Sumner to their traditional territory. Navajos observed the terms of the treaty.

Consequently, some Mormon families recolonized Kanab in 1869 (Olsen 1965:16). By 1870, therefore, the Kaibab Band of Southern Paiutes had lost the bulk of their most productive riverine and spring-flow oasis horticultural lands to Euroamericans. Meanwhile, other LDS colonists expanded settlement in the western sector of the Virgin River watershed.

Callville - 1864. The LDS Church First Presidency in October selected Anson Call to lead a Mormon colony at a steamboat landing on the Lower Colorado River. By December 17, Call had reached the stream, and began warehouse construction. The fact that Call picked a growing watermelon the day after his arrival indicates that the Mormons colonized in the midst of Southern Paiute riverine gardens (Fleming 1967:151-52).

Saint Thomas - 1865. Brigham Young and other LDS Church leaders envisioned establishing new Mormon towns along the wagon road between existing settlements and the Colorado River steamboat port. Consequently, a number of colonists from Utah moved into the Moapa (Muddy) River Valley in 1865. They established a new village called Saint Thomas (Fleming 1967:155). Additional colonists rapidly arrived.

Saint Joseph - 1865. In June, some of the Mormons split off from Saint Thomas to found another new town, Saint Joseph, located 12 miles upriver from St. Thomas (Fleming 1967:157).

Simonsville - 1865. By the end of 1865, sufficient Mormon colonists had reached the Moapa River Valley to found a third riverine oasis town. It became the site of a cotton gin working with water power by the following year (Fleming 1967:158-159).

During the spring of 1866, many Native Americans militarily attacked Euroamerican settlements. In May, Mormon leaders organized an expedition to negotiate with Southern Paiute leaders in the Virgin River watershed. The latter remained at peace (Fleming 1967:160). That October, however, land-greedy new colonists drove their wagons to the upper Moapa River. Southern Paiutes with blackened faces confronted them with bows and arrows in hand. Superior Mormon armament prevailed, but Brigham Young ordered the settlers to leave (Fleming 1967:162-63).

West Point - 1869. The expanding Mormon population in the Moapa River Valley reached sufficient numbers by 1869 for the Saints to found another village called West Point (Fowler and Fowler 1971:109; Lockwood 1872:65).

In the late 1860s confusion over Nevada-Utah boundaries developed into a struggle over state-territorial authority--and their respective abilities to raise taxes. Boundary alterations of 1861, 1862, 1866 and 1868 left unclear whether Mormon settlements along the Muddy (Moapa) fell under Nevada or Utah jurisdiction. Though both Lincoln County in Nevada and Virgin River County in Utah levied taxes on these settlers, their allegiance to their church meant that they paid taxes to the court of the newly created Virgin River County in Utah Territory. Though these taxes were paid in produce (e.g. \$20.00 in flour, \$12.45 in wheat, and \$28.55 in cash), the State of Nevada at the same time claimed its dues--in gold and

silver coin--"in at least one instance at the point of a gun" (Fleming 1967:171).

Though the Mormon settlers and their elders spared no effort to have the Moapa settlements declared a part of Virgin River County in Utah, court decisions favored the State of Nevada. A survey in 1870 proved that the 141 degree latitude was 30 miles east of the Mormon settlements. Brigham Young advised his followers to "petition the Legislature for an abatement of all back taxes, setting forth the disadvantages under which (they) labored, being entirely an agricultural, instead of mining people and far removed from market." Young also encouraged the LDS councils to come to agreement about staying or not, offering welcome in Utah. In February of 1871, over 600 LDS colonists left for the east, leaving 150 homes, 500 acres of cleared land, 8,000 bushels of wheat "in the boot," and extensive irrigation systems (Fleming 1967:171).

Long Valley - 1865. To the east in Kaibab Band territory, Mormons moved into Long, or Parunuweap, Valley in 1865. Navajo raiders convinced the pioneers to evacuate, and its fields reverted temporarily to Kaibab Paiute control. In 1871, however, the LDS Church members living on Moapa River discovered that they were in the State of Nevada rather than Arizona Territory as they had supposed. Unwilling to live in a state dominated by non-Mormon miners, the Moapa River Valley Saints emigrated. Some 200 of them moved eastward into Long Valley in 1871, reinforced by another 100 other Mormons. They seized 1,300 acres of arable land and large grazing areas, forcing the native Southern Paiutes to emigrate (Stoffle and Evans 1976:183; Arrington 1954:8). Known Kaibab population dropped from 232 in 1871 to 207 in 1873. Southern Paiutes may have lost people to an epidemic/epizootic disease reported among Euroamericans in Nevada mine camps in the latter year (Pioche Daily Record 1 Feb. 1873:3).

Panguitch - 1864 and 1871. Panguitch Lake continued to provide a major fresh fish component in the Southern Paiute diet until the mid 1860s. Not until 1864 did LDS Church members initiate colonization on the lake shore (Chidester 1955:387). The Paiutes resisted, and in 1866, the two ethnic groups went to war against each other. The Southern Paiutes actually won the early stages of the conflict. The Panguitch Lake colonists fled in May of 1866, and others abandoned all the Mormon towns from Gunnison south to Kanab during the spring and summer of 1867. The Paiutes did not, however, resist Mormon resettlement in 1871 (Chidester 1955:388). The Paiute fishermen initially did refuse to allow the colonists to fish in Panguitch Lake, selling part of their own catch to the Mormons (Chidester 1955:389).

## LAND AND WATER RESERVATION - 1873

By mid-1873, the long-standing United States policy of reserving land and water rights for Native American groups, and the Southern Paiute strategy for surviving Euroamerican invasion clearly coincided. On the other hand, Euroamerica had colonized so much of the Southern Paiute riverine and lacustrine oasis production base that even the decimated population remnant in 1873 literally depended upon begging from Euroamerican colonists to survive. The colonists and the native inhabitants hunting with firearms had nearly exterminated big game animals. Euroamerican large-scale construction to store water for irrigation had dried up marshes and riverine oases, much to the detriment of the Southern Paiute food base, in terms of fish, waterfowl, and even upland game birds and mammals that had depended on surface flowing streams for water. During the years of intergroup contact, Southern Paiutes also learned to appreciate Euroamerican style clothing, probably mainly for the warmth provided during the cold winters. By 1873, "Some food and greater part of their clothing is obtained by begging" (Fowler and Fowler 1971:108). Thus, Southern Paiutes recognized that their only hope for any shred of ethnic economic self-sufficiency lay in persuading the federal government to reserve them land and irrigation waters. In fact, Euroamerican colonization had progressed so far in occupying irrigable land that the federal government by 1873 no longer had the option of reserving a single large irrigable tract on which to attempt to concentrate an estimated 2,300+ Southern Paiutes (Fowler and Fowler 1971:108) within their aboriginal territory. It had to recover irrigable land from citizen colonists.

Even though creation of a reserved irrigated landbase for Southern Paiutes meant that some colonists would have to surrender riverine oasis fields they had seized, colonist opinion generally favored federal intervention. For even the member of the LDS Church had grown tired of continuing to pay an economic tax to keep Southern Paiutes alive and peaceful. The guidelines Brigham Young had laid down in the late 1840s and early 1850s still governed much Mormon behavior. Yet, the early pioneering phase of LDS land colonization had passed by 1873. Mormon farming villages in aboriginal Southern Paiute territory no longer needed nor sought Paiute labor to construct forts, open irrigation canals, and the like. European converts continued to pour into Utah at an average rate of 3,000 annually (Rusling 1875:176), they terminated the need for Southern Paiute physical labor. The continued arrival of ethnic Northwestern Europeans encouraged the transformation of the farming villages into religiously and ethnically homogeneous cooperative colonies. No longer needed, Southern Paiutes were in essence expelled from the villages. Under changed circumstances, the Mormon population was more willing to shift the economic cost of placating surviving Southern Paiutes to the federal government. So Mormons for



confinement of Southern Paiutes to a reservation--as long as the federal authorities did not take Mormon lands to provide the natives with an economic resource base.

A Newspaper Crisis. In 1873, events outside Southern Paiute country created a serious crisis in the minds of both Euroamerican colonists and Southern Paiutes that led to a significant increase in the federal government effort among the latter. The previous fall, an Indian Office official on the Pacific Coast called in troops to arrest a Modoc leader known as Jack. Capt. James A. Jackson led 38 troopers out of Fort Klamath about noon on 28 November 1872. Before nightfall, he had started the Modoc War (Murray 1959:82ff). Jack evaded arrest. His followers slew a number of colonists in the neighborhood and took refuge in lava beds. In January, 1873, volunteer and regular troops failed to dislodge the Modocs from their defensive stronghold (Murray 1959:114ff). After negotiating for weeks, the Modoc leaders killed E. R. S. Canby, the U. S. Army general in command of federal forces surrounding the lava beds (Murray 1959:189). Canby was the first regularly commissioned general slain by Native Americans (Murray 1959:196).

Not until early October were four Modocs hanged for killing Canby under a flag of truce (Murray 1959:304). This conflict between a handful of Modocs and regular troops and both California and Oregon militia units affected the Southern Paiutes because every incident was widely reported in United States newspapers. Numerous urban newspapers sent correspondents to the war zone, and even photographers captured scenes to inform readers. The Modoc War, miniscule though it really was, became a major print-media event. As correspondents chronicled every army failing and contretemps, Euroamericans reacted with scorn or fear, depending on their geographic distance from Native Americans who conceivably had grounds for armed action against colonists.

The newspaper correspondents turned the small-scale confrontation into a major public relations disaster for President U. S. Grant's administration. In Utah Territory, reports of the Modoc confrontation created "much excitement in the country." Euroamericans greatly resented the Modoc success in resisting federal and militia troops. Some of them vented their resentment on the Native Americans living near them. As a result, "the latter were terrified, and many of them had fled to the mountains for refuge (Fowler and Fowler 1971:97) by May. Print media treatment of the Modoc conflict precipitated attitudes among both Euroamericans and Native Americans. The citizens became frightened that Southern Paiutes and other Native Americans were preparing to war on them, and appealed for military protection--ineffective though regular troops had shown themselves to be against the Modoc warriors. Restricting Southern Paiutes to reserved lands would be a way to reassure the jittery voting citizens.

Southern Paiute Straits. Actually, the frightened Euroamerican colonists had nothing to fear from the Southern Paiutes and their neighbors. The Native Americans were "much more terrified than the whites" that the colonists would attack them (Fowler and Fowler 1971:97). Reserving lands for the Southern Paiutes where they could find some refuge from nervous Euroamericans would reassure them. Enlarging their irrigated field food production base would also enable Southern Paiutes to reduce their very real economic dependence upon Euroamerican colonists. If the Southern Paiutes could raise more of their food requirements, they would not need to beg so much from Mormons and miners. If they could become more self-sufficient, they would segregate themselves more from Euroamerican colonists and reduce their exposure to death risks, denigrating treatment, etc.

From 1847 to 1873, Southern Paiute chances of surviving steadily diminished with the rapid Euroamerican invasion of Southern Paiute horticultural fields, riverine oasis and upland competition with Old World domestic livestock for grass seeds, forb seeds and shrub seeds; and diversion of fishing waters. Southern Paiute access to a rapidly diminishing natural resource base decreased even faster than Southern Paiute population was declining due to high mortality from Old World diseases. The demographic straits to which Southern Paiutes had been reduced were again brought home to them in 1873. Malaria spread among those living in Moapa ("Mosquito Water") River Valley (Rambeau and Holmes 1976:98).

No doubt Southern Paiute leaders had perceived the desirability of having lands reserved for them some years before 1873. The relatively successful adjustment of many Utes to the Uintah and Ouray Reservation certainly must have been known to many Southern Paiutes. The Southern Paiutes scattered about their aboriginal Holy Land much preferred having "some part of its original territory set apart for its use" (Fowler and Fowler 1971:108).

One distinctively aboriginal characteristic of Southern Paiute survival strategy in 1873, reinforced by decades of epidemic mortality, stands out. While the Uintah and Ouray Reservation might serve as a general model of the benefits of acquiring reserved lands in the Southern Paiute Holy Land, it held no specific attraction for Paiutes. On the contrary, Southern Paiutes firmly believed that the Utes there "were profoundly skilled in sorcery, and that under no consideration would the Pai-Utes live with them (Fowler and Fowler 1971:103). Evidently Southern Paiutes did not explain to federal officials that the Uintah and Ouray Reservation, being within the aboriginal territory of the Utes, was suffused with the supernatural power of the Ute supernatural beings. It was part of the Ute Holy Land, and therefore dangerous for Southern Paiutes. The Southern Paiutes desired reserved lands, but only within their own ancestral Holy Land where their own

traditional supernatural beings would protect them against Ute sorcery. Although they were frightened of Euroamericans after nearly half a century of invasion, the Southern Paiutes remained more frightened of traditional Ute sorcery than they were of the LDS sorcery or of the guns of relatively secularized miners.

Still, the print media excitement whipped up in the spring and summer of 1873 during the Modoc conflict upset Euroamericans living in aboriginal Southern Paiute territory and frightened Paiutes who already recognized the potential benefits of reserved lands. By mid-1873, historical changes had created conditions under which federal officials, Mormon colonists, miners, and Southern Paiutes concurred that reserving lands for the latter was desirable.

Moapa Reservation: Adequate Irrigable Land, 1873. R. N. Fenton of the Indian Office Nevada agency had thought about where best to reserve irrigable lands for Southern Paiutes before the Modoc conflict began. In 1869, Fenton recommended to his superiors establishing a reservation on Moapa River 25 to 35 miles upstream from St. Thomas. Fenton (1869:204) envisioned reserving 700 to 1,000 acres of irrigable land and additional stock grazing acreage (Rambeau and Holmes 1976:92). By early 1873, the Indian Office seems to have had prepared a recommendation to reserve much of southeastern Nevada for the subsistence of various Southern Paiute bands. The Secretary of the Interior recommended a large reservation to President U. S. Grant. On 12 March 1873, Grant signed an executive order withdrawing the area along the eastern boundary of the state beginning at the Colorado River north to a point due east, a spot one mile north of Muddy Spring. The north boundary ran from the state's eastern border due west through the point a mile north of the springs to the 115th Meridian. The western boundary ran along that meridian from the northern line to a point due west of the intersection of the Colorado River with the eastern border of Nevada. The southern boundary ran due east from the 115th Meridian to the western bank of the Colorado River, and followed it upstream to the starting point (Kappler 1904:I:866-867).

The area reserved for Southern Paiutes was far smaller than their entire Holy Land. It was even smaller than Paranayi territory. Yet, it offered a true economic opportunity to the sadly diminished Paiute population that survived in 1873. Much of the area was desert, but an estimated 6,000 acres was irrigable. While the Muddy or Moapa River was but one of the streams comprising the Virgin River watershed, 6,000 acres under irrigation would provide 2.6 acres or approximately one hectare of irrigable cropland per surviving Southern Paiute. Families would have several hectares to cultivate, and the irrigable crop land would be almost certainly more than was left to Southern Paiutes in the spring of 1873 elsewhere. Moreover, the upland headwaters of the Moapa River in the

reserved region included "some grass-lands of no greater extent" than the irrigable area (Fowler and Fowler 1971:108). Still, stubble field pasturage and the grasslands would support some horses and range cattle to provide animal protein in the Southern Paiute diet, or animals to sell for cash.

Special Commissioners J. W. Powell and G. W. Ingalls had reason in mid-1873 to be optimistic that the remnant Southern Paiute population would migrate to the new reservation. They believed that the land irrigable from the Moapa River would support the remnant Southern Paiutes. They advised the Commissioner of Indian Affairs not to attempt to move any additional Native Americans to the newly reserved areas. The lower Virgin River proper, they warned was too full of salt in solution to be useable to irrigate crops, even though it flowed through the area.

There was a fatal flaw in the plans of federal officers for providing Southern Paiutes with an adequate irrigable land base on Moapa River. Voting citizens had colonized the riverine oasis, and considered that they had established ownership of their respective parcels under national and Nevada state law. The newcomers failed to maintain all of the Mormon-built canals or indeed all of their adobe houses. Powell and Ingalls recognized, however, that the settlers held possessory rights. Clearly the special commissioners perceived the departed Mormons as having held the stronger claims (Fowler and Fowler 1971:109). They seriously underestimated the land/money greed of post-Mormon colonists, as well as their political power.

Moapa Reservation: More Land - 1874. Less than a year after President Grant set aside the Moapa Reservation, he changed its boundaries. On 12 February 1874, he issued a new executive order defining the reservation as starting at the Colorado River 8 miles east of the 114th Meridian, running north to the 37th degree north latitude, then west to 20 miles west of the 115th Meridian. Then the western boundary was 35 miles long due north and south. The southern boundary ran due east for 36 miles, then turned south to the Colorado River channel, and up the middle of that channel to the starting point (Kappler 1904:I:867).

The external boundary adjustment altered the configuration of the reserved area mainly in desert and arid territory but also expanded the irrigable acreage included. It preserved the adequate irrigable land base planned in the original 1873 reservation for Southern Paiutes. It moved the eastern boundary eight miles eastward and expanded the reservation to about 2,000,000 acres. (Rambeau and Holmes 1976:95).

A determined Moapa River Valley settler was hard at work, however, lobbying members of Congress in the national capitol to destroy the executive order reserve. Newspaper writers in

distant Pioche regarded Col. Isaac Jennings as a leading settler on the Moapa River. Jennings made a serious effort to ingratiate himself with the Southern Paiutes labor gangs still eking out a living in the valley. He did so, evidently, in order to try to persuade them to oppose reserving lands and sharing reserved lands with members of the other subsistence bands of Southern Paiutes (Pioche Daily Record 22 Sept. 1874:3). The local Indian agent claimed that he was the only colonist opposed to the reservation. The southeastern Nevada lobbyist living full-time in Washington was his wife. Whether the Jennings sought to hold on to their land in Moapa Valley, or whether they sought to persuade Indian Office officials to purchase their land at a relatively high price is not clear. If a lot of cash was their in goal, they failed to reach it. If they sought to retain their land, they succeeded. Annie R. B. Jennings (1874:2) found a more than willing ally in Nevada Senator William M. Stewart, who opposed reserving lands for Native Americans anywhere in Nevada (Rambeau and Holmes 1976:97).

Moapa Reservation: 1,000 Dusty Acres - 1875. In the Indian Office Appropriation Act for fiscal 1876, passed in the spring of 1875, a single sentence paragraph terminated the federal effort to reserve an adequate irrigable land base for Southern Paiutes in Moapa River Valley.

"That the Pai-Ute reservation in Southeastern Nevada is hereby reduced to one thousand acres to be selected by the Secretary of the Interior in such manner as not to include the claim of any settler or miner" (Kappler 1904:I:157). Senator Stewart pushed this denial of Southern Paiute aboriginal land rights through the Congress without a hearing (Rambeau and Holmes 1976:97). The vitriolic terms Mrs. Jennings used to refer to Agent G. W. Ingalls and his brother in a jubilant letter she wrote to the Pioche newspaper indicates that her lobbying constituted a highly personal vendetta against them. The Southern Paiutes lost more than either Ingalls or J. W. Powell. In effect, in order to meet the conditions of the appropriation act and salvage any irrigable land at all for any Southern Paiutes, the Indian Office purchased one farm and desert lands belonging to one Volney Rector. It paid \$1,800, the appraisal price that Powell and Ingalls set two years earlier. That price bought farm buildings to be used for an agency, as well as the land (Kappler 1904:I:867-68).

Only a small fraction of the 1,000 acre 1875 Congressional reservation was irrigable. As long as Congress appropriated funds to provide some rations and clothing for Native Americans, it would serve as a suitable federal agency site. It was not an adequate land base for Southern Paiutes, however, so they continued to depend upon begging and taxing Euroamericans, casual wage labor, what hunting they could accomplish, and wild plant food collecting. Avoiding starvation kept Southern Paiutes intimately familiar with the

entire range of traditional plant foods, and skilled in locating and harvesting them (see TABLES 7-12).

The thousand-acre Moapa River Valley reservation was all but useless to Southern Paiutes. Mormon stock raisers allowed, if they did not actually encourage, their animals to range onto the reserved area. There the hungry cattle and horses "devour every green thing in their way." Trying to live next to dominant group stock raisers proved to be as profitless as had been trying to garden in the oases on the active Old Spanish Trail. The Nevada Indian agent lived far to the north and he concentrated scarce personnel at Pyramid Lake and other northern reservations (Rambeau and Holmes 1976:98). As a result, Euroamericans not only ran their own cattle on the small Moapa Reservation, but also stole government cattle from it and killed a local government farmer who opposed them (Rambeau and Holmes 1976:99). "As a consequence the Indians are scattered over the surrounding country for 200 miles around, eking out a precious existence by working, begging, root-digging, and insect-eating--a life not of their choice" in 1880 (Stoffle and Evans 1976:188; Spencer 1880:125-126). In 1885, 24 people reportedly lived on Moapa River Reservation, 30 at Bunkerville, 35 at St. Thomas, 23 at Las Vegas, 20 at Hiko and 25 at either Pioche or Panaca (Rambeau and Holmes 1976:101) in labor gangs.

Formal Classroom Instruction. Formal instruction in academic subjects, presented within classrooms, constituted one major component of the United States program for Native American cultural transformation. As already indicated, Southern Paiutes themselves seized the initiative as far as learning to speak the English language was concerned. That initiative began no later than the early 1870s. Yet the federal program did not reach Southern Paiutes until nearly the end of the nineteenth century. The government established a day school for Shivwits and Kaibab children in 1898 (Stoffle and Evans 1976:189). Children of the forcibly relocated Shivwits entered school at the Santa Clara Valley purchased reservation about the same period (Rambeau and Holmes 1976:113-114). A day school at Las Vegas which opened in 1912 closed by 1913, and children were sent to boarding schools elsewhere until the latter 1920s when Las Vegas public schools began to accept young Paiute students (Alley 1977:9-16). A Moapa River school opened early in this century with only one to two dozen pupils (Sharp 1905:245). Thus, federal efforts to provide Southern Paiute children with classroom instruction have not been distinguished by their efficiency (Knack 1978; 1980).

## SURVIVAL BY MOBILE FLEXIBILITY

The available documentary record does not indicate whether Southern Paiutes ever entertained any great hope that the Moapa River Valley irrigable lands actually would be returned to them. Probably they did not. By 1873, the surviving Southern Paiutes had already worked out a strategy that enabled them to survive within their ancestral Holy Land. That strategy conceded political and economic domination to the invading Euroamericans. It rested only marginally on continued exploitation of natural food resources in traditional patterns. Mainly, it depended upon learning the English language so as to be able to communicate with all members of the dominant ethnic group, and upon using English language and other skills to obtain wage labor in Euroamerican enterprises. Cash earned by labor purchased the basic foodstuffs that enabled Southern Paiutes to survive.

Southern Paiutes themselves worked out this strategy. Learning the English language, for example, resulted from native initiative, not from the federal government instructional program that changed linguistic patterns among most Native American groups (Spicer 1962:348). In fact, the federal program of formal classroom instruction in English was barely underway among Southwestern Native Americans by 1873. A school had been established among Papagos at San Xavier del Bac in 1864. One was set up for Navajos at Ft. Defiance in 1869 but discontinued for lack of parental concern. The first school for Gila River Pimas had opened in 1871; the first for Hopis began at Keams Canyon in 1872. Then, the Indian Office initiated a school in 1873 at Parker, Arizona, for Mojaves and Chemehuevis (Spicer 1962:437). By that time, Southern Paiutes already were learning English in significant numbers on their own initiative. As Powell and Ingalls reported: "a great many of them are learning to speak the English language; especially is this true of the children" (Fowler and Fowler 1971:108). The major themes of Southern Paiute biological and cultural persistence were already defined. Southern Paiutes survived through their own strategies and efforts. Federal programs would affect them only marginally until well into the twentieth century.

Because the Southern Paiutes had to educate themselves about the Euroamerican world, including its science and technology, they continued for some years to suffer some important handicaps. Access to European medical knowledge and technology lagged; consequently Southern Paiute traditional shamanistic curing persisted (Kelly 1939:151-67). When Lower Colorado River steamboat passengers transmitted smallpox up and down the valley in 1877, the Chemehuevi branch of Southern Paiutes remained susceptible. They had not been vaccinated, so many perished (Laird 1976:xxi).



Where Southern Paiutes somehow managed to retain control over irrigation water, they continued to raise food crops. At least one able, evidently self-educated man was able to ranch at the Las Vegas oasis into the post-railroad period during the first decade of the twentieth century (Miller 1961:6). At the opposite end of the continuum of socio-cultural adjustment was one lone man who lived at a small spring between the Providence and Granite Mountains. Irrigating a small field and hunting, he apparently became a virtual hermit, although he had once been a mountain sheep shaman (Laird 1976:11).

Most Southern Paiutes subsisted mainly in the national cash market economy, although as unskilled, occasional wage laborers who earned a minimal share of its benefits. Throughout the decades, Southern Paiute mortality continued high. Consequently, survivors attended frequent funerals. After the automotive age arrived and they acquired automobiles, Southern Paiutes typically traveled scores to hundreds of miles to attend funerals. As a result, funerals became occasions for exchanging vital information about job openings and opportunities, perpetuating a high level of geographic mobility in quest of wage labor. Preconquest Southern Paiutes were transhumant; their twentieth century descendants became nomadic workers.

Delamar. Most of the rich ore lodes to which Southern Paiutes guided Euroamericans during the 1860s proved to be relatively small and shallow. Consequently, many of the rapidly populated mining camps were ephemeral settlements, although some, such as Pioche, persisted on the basis of deeper economic ore deposits. As a result, the Euroamerican mining population somewhat resembled the Southern Paiute population in its geographic mobility. Miners moved from camps at shallow ledges that played out to the towns at larger ore bodies, or to new ones where later discoveries were made. One of the very important later discoveries was that at Delamar.

Southern Paiutes may have exploited the gold deposit beginning in the late 1870s. Euroamerican farmers in the Paranagat Valley located the deposits in 1890 and 1891, and formed the Ferguson Mining District in 1892. Reports of assays running between \$75 and \$1,000 per ton stimulated a rush of miners from moribund Pioche. The mobile miners founded Ferguson at the Monkey Wrench mine, and Helene, a tent city, at the Magnolia Mine. The latter boasted a newspaper and from June of 1892 until December of 1894 a post office. The enduring name came from John De Lamar, who purchased the principal claims in 1893 and accelerated development. Another camp became Delamar, acquired a newspaper and post office in 1894, and by 1895 a 50-ton mill. During the 1895-1900 half-decade, Delamar produced over half of Nevada's mineral output.



There was a large human cost involved in gold mining at Delamar. The mills used a dry process generating silica dust. Consequently, Delamar was one of the most dangerous mines in Western mining history (Paher 1970:298; see also Chapter V:275).

Caliente--1905. The Mormon Church pioneered construction of the Utah Southern Railroad southward from the Union Pacific transcontinental tracks at Ogden. By the late nineteenth century, the track reached Milford, Utah, and was extended to Uvada in 1899. Meanwhile, other railroad interests coveted the Meadow Valley Wash route south through Nevada. In 1900, Senator W. A. Clark purchased for back taxes title to the Oregon Short Line's grade there. That act set off court litigation, in which Clark obtained an injunction halting the Oregon Short Line's construction efforts. Clark had his tracks built to a ranch owned by Charles Culverwell, purchasing first a right of way through it, and then land for a shop. From 1902 to 1905, that was the end of track, and the people at the end of the track laid the foundations for a new settlement, known as Caliente. Clark and the Oregon road compromised in 1904, track was laid along Meadow Valley Wash and on to Las Vegas. Thus, Caliente started as a railroad town, on the same railroad that converted Las Vegas Ranch into a town dependent first on transportation, then tourism and eventually gambling-tourism (Scrugham 1935:609-611). Both Caliente and Las Vegas mark a twentieth century urbanization in Nevada that turned Euroamerican attention away from the Southern Paiute people, as railroads and then automobile highways facilitated Euroamerican geographic mobility and immigration into urban places of a size never before possible.

#### CULTURAL PERSISTENCE: HERBAL REMEDIES

While Southern Paiutes formulated their own ethnic group strategy to survive under Euroamerican domination, they could not gain effective access to some Euroamerican knowledge for several years or even decades. Medical knowledge is one example of a specialized Euroamerican expertise to which Southern Paiutes encountered difficulty gaining access. Consequently, Southern Paiutes continued to rely on traditional skills in setting broken bones and in treating numerous ailments. Lack of prompt and effective access to dominant group medicine helped to insure that Southern Paiutes would be a persistent cultural group (Spicer 1971).

Denied effective access to Euroamerican medical services and treatment, Southern Paiutes depended upon their own therapeutic specialists. The latter recognized that their specialized knowledge of herbal remedies possessed monetary value to other Southern Paiutes living in the market economy. Consequently, herbalists have been relatively reluctant to share their economically valuable specialized knowledge with

anthropologists and other outsiders. Inevitably, any listing of important Southern Paiute medicinal plants tends, therefore, to be illustrative rather than complete. TABLES 13 through 18 identify some culturally significant Southern Paiute medicinal plants recorded by more than one authority.

Wild Plant Food Sales. Southern Paiutes long continued to collect at least some edible berries that could be sold to Euroamerican colonists. Until late in the nineteenth century, at least the LDS Cooperative Store in Cedar City purchased "dried berries" from Native Americans for store scrip (Palmer 1958:358). Apparently enough Euroamerican colonists in Utah's Dixie developed a taste for dried edible berries to generate small scale commercial demand for this product. Southern Paiutes thus labor-intensified the natural resource in order to participate in the semi-cash economy of the time and area (see Chapter V:271).

Leather Gloves. The Cedar City cooperative store also handled buckskin gloves made by Native Americans. Thus, Southern Paiutes were still able to kill some deer, and by labor intensification convert the hides into marketable gloves. These activities involved a measure of Southern Paiute entrepreneurship absent from the more general wage labor strategy for survival in Euroamerican-occupied territory.

The Basket Trade. Southern Paiute women long made coiled baskets from willow splints and Devil's Claw seedpod skins, thus achieving beautiful light-dark designs. Many Euroamericans purchased such baskets to use, or to exhibit in their homes, particularly after railroad construction fostered tourism in the Southwest. Las Vegas became one major outlet for Southern Paiute baskets after completion of the Los Angeles to Salt Lake City railroad in 1905. The development of automotive tourism after World War I expanded the tourist market for baskets even more. Women who made baskets during the 1920s and 1930s never received fair recompense for their long hours of artistic creativity, cultivation of Devil's Claw and willow plants, processing of black and white materials, etc. Their basket sales enabled women to obtain cash with which to purchase basic groceries, cheap clothing and shoes for members of their families (Alley 1977:11). The importance of basket sales, few though the dollars they brought in were, strongly reinforced Southern Paiute perception of high worth of both willow (Salix spp.) and Devil's Claw (Proboscium parviflora) plants (see Chapter IV:256), although now within an altered set of values.

#### CULTURAL CHANGE: WAGE LABOR

The Southern Paiute initiative of exchanging physical labor for food, clothing, and finally cash, appeared at least

TABLE 13. SOUTHERN PAIUTE MEDICINAL LEAF TEAS

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1. <u>Achillea</u> <u>lanulosa</u> <u>millefolium</u>	i'itsikwasipi	Yarrow	coughs weak, upset stomach
2. <u>Anemopsis</u> <u>californica</u>		Yerba mansa	venereal disease (V. D.)
3. <u>Arctostaphylos</u> <u>pungens</u>	(ararampip)* ada'dimpipi	Manzanita	rheumatism
4. <u>Artemisia</u> <u>tridentata</u> <u>dracunculoides</u> <u>ludoviciana</u> <u>filifolia</u>	(sangwavi) sanwa'bi pas pass-pahs salm-ap-weep	Sagebrush	colds, coughs, stomach ache childbirth, worms, swelling and bruises
5. <u>Cowania</u> <u>mexicana</u>	(anapu) uh-nop	Cliffrose	V. D., colds
6. <u>Ephedra</u> <u>veridis</u> <u>torreyana</u>	(tutuupi) (utuupi) tutu'pi tu-tupe	Jointfir	internal disorder, V. D., stomach ache
7. <u>Eriodictyon</u> <u>angustifolium</u>	wee-poo-en-ub	Yerba santa	colds, coughs
8. <u>Larrea</u> <u>tridentata</u>	(yatamp) ya'tampi yah-temp	Creosotebush	internal disorders, stomach ache, cramps, colds
9. <u>Ligusticum</u> <u>porteri</u>	Pah-net-snap		stomach ache
10. <u>Mentha</u> <u>canadensis</u>	(paxwananampi) paxwa'nanimpi	Mint	colds
11. <u>Penstemon</u> <u>palmeri</u>	toxox'awatsip		fever
12. <u>Porophyllum</u> <u>gracile</u>	pa'kwitupip		stomach ache

TABLE 13. continued

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13.	<u>Salvia carnos</u>	siguwii see-goo-we-up	Purple sage Desert ramona	colds sores
14.	<u>Thamnosma</u> <u>montana</u>		Turpentine broom	colds

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Kearney and Peebles 1942:70, 516; Kelly 1939:153, 162: Train et. al.  
1941:61, 68, 122, 136; Bye 1972:90, 92.

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\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 14. SOUTHERN PAIUTE MEDICINAL ROOT, TWIG, BRANCH, PLANT AND BARK  
TEA

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1. <u>Cercocarpus</u> <u>ledifolius</u>	(tonampi)* <u>dunumbe</u>	mountain mahogany	Tuberculosis blood tonic
2. <u>Cucurbita</u> <u>foetidissima</u>	ankompi <u>ahn-no-quav</u> <u>arno-cup</u>	desert gourd	V. D. gonorrhea
3. <u>Cycladenia</u>	(pawa manampi) pawa'-ma'anim pi-tinab		
4. <u>Dalea Fremontii</u>	i- <u>era</u> -midja	indigo bush pea bush	indigestion "medicinal"
5. <u>Eriodictyon</u> <u>angustifolium</u>	kutsa'rimpi	yerba-santa	pulmonary troubles, V. D.
6. <u>Garrya</u> <u>flavescens</u>	ka'ninkwap	silktassel	heart trouble
7. <u>Gilea aggregata</u>	anka'siti	skyrocket	stomach ache
8. <u>Heliotropium</u> <u>curassavicum</u>	wa'ateyowimpi	heliotrope	internal disorders
9. <u>Juniperus</u> <u>communis</u>	(pawa'ap*) <u>pah-wap-o-ruit</u>	alpine juniper	V. D.
10. <u>Phaecelia</u> <u>palmeri</u>			internal disorders
11. <u>Pluchea sericea</u>		aroweed	indigestion, diarrhea, passing blood
12. <u>Salix</u> sp.	(Kanavi) kah-nav	willow	"blood purifier"
13. <u>Wyethia</u> <u>scabra</u>	(taxuichaxantiip) tixu'si taxanti taxu'itcaxantip tikoitcixantipi tixu'si taxantip	mules' ear	cathartic emetic V. D. stomach ache

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Kearney and Peebles 1942:739, 658, 736; Kelly 1939:153, 162; Train et.  
al. 1941:53, 62, 64, 71, 91, 133.

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- Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 15. SOUTHERN PAIUTE MEDICINAL PLANT POULTICES AND POWDERS

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1. <u>Anemopsis californica</u>		Yerba mansa	V. D. sores
2. <u>Atriplex canescens</u>	murunibi	Saltbush	sores
3. <u>Cucurbita foetidissima</u>		wild gourd	applied to piles & sores
4. <u>Cycladenia</u>	(pawa manamp)* pawa'ma' animpi		granulations in the eye
5. <u>Echinocereus coccinens</u>	ova'xobi cacuusov'xobi		boils
6. <u>Ephedra nevadensis torreyana</u>	(tutuupi) (utuupi) tu-tupe	Mormon tea (Jointfir)	burns V. D.
7. <u>Eriodictyon angustifolium</u>		Yerba santa	rheumatism, partial paralysis
8. <u>Krameria grayi</u>	nah-kah-vah dah-tonub	white ratany	sores
9. <u>Larrea tridentata</u>	(yatamp) ys'ya'mip	creosotebush	measles
10. <u>Ligusticum porteri</u>	Pahnet-snap		sprains & bruises
11. <u>Nicotiana attenuata</u>	(koapi) koap	tobacco	cuts/sore eyes
12. <u>Penstemon palmeri</u>	toxos'awatsip	beardtongue	fever
13. <u>Perezia wrightii</u>			hairs at base and root used for styptic
14. <u>Rhus trilobata</u>	(suavimp) (i'is) <u>see-a-wimp</u>	squawberry	astrigent for smallpox
15. <u>Sida torryana</u>			chicken pox eruptions

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Kearney and Peebles 1942:273, 422; Kelly 1939: 153, 154, 162; Bye  
1972:93, 94.

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\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.



TABLE 16. SOUTHERN PAIUTE MEDICINAL PLANT WASHES

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1. <u>Anemopsis</u> <u>californica</u>	cheu-pahn-iv	yerba mansa	muscular pains/sore feet
2. <u>Artemisia</u> <u>tridentata</u>	(sangwavi)* sanwa'bi	sagebrush	sore eyes
3. <u>Desmanthus</u> <u>illinoensis</u>	Pah-oh-pim		trachoma
4. <u>Eriodictyon</u> <u>angustifolium</u>	pa'sinipi	yerba-santa	sore eyes
5. <u>Euphorbia</u> <u>albomarginata</u>	tava'namu'obi	spurge	sore eyes
6. <u>Euphorbia</u> <u>arenicola</u>	tah-wee-carib	spurge	sore eyes, swollen
7. <u>Hymenatherum</u> <u>pentacheatum</u>			sore eyes
8. <u>Hymenoclea</u> <u>salsola</u>	paiab	burrobush	bathing infants and sick persons
9. <u>Larrea</u> <u>tridentata</u>	(yatampi) yah-temp	creosote	rheumatism, measles, chicken pox
10. <u>Prosopis</u> <u>odorata</u>	(kwiyaṛə) quee-et-umb	Fremont screwbean	sore eyes
11. <u>Salvia carnosa</u>	siguwiiipi see-goo-we-up	purple sage desert ramona	sores

Kearney and Peebles 1942:543, 739; Kelly 1939:153, 154, 162; Train et. al. 1941:33, 67, 71, 74, 96, 123, 136.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 17. SOUTHERN PAIUTE MEDICINAL PLANT CHEWS

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT
1. <u>Berberis repens</u>		oregon grape	cold
2. <u>Datura</u> <u>meteloides</u> <u>wrightii</u>	(momompā) * mimip main-oph-weep man-op-weep	jimsonweed	cough
3. <u>Glycyrrhiza</u> <u>lepidota</u>		Desert root (American licorice)	tonic
4. <u>Ligusticum</u> <u>porteri</u>	paxu'ranip	lovage	toothache
5. <u>Phragmites</u> <u>communis</u>	hoh-goh-koh	honey dew (exudate)	pneumonia
6. <u>Pluchea sericea</u>		arrowweed	indigestion
7. <u>Thamnosma</u> <u>montana</u>		turpentine broom	constipation
8. <u>Yucca baccata</u>	(tachampi)	Yucca	cathartic

Kearney and Peebles 1942:516; Kelly 1939:160; Train et. al. 1941:66, 116, 120; Bye 1972:90, 94.

\* Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

TABLE 18. MISCELLANEOUS SOUTHERN PAIUTE MEDICINAL PLANTS

BOTANICAL NAME	PAIUTE NAME	ENGLISH NAME	COMPLAINT	FORM
1. <u>Actostaphylos</u> <u>patula</u> <u>pungens</u>		Manzanita	fevers	smoke
2. <u>Angelica</u> sp.	(to'nchavi)* tontsabi		cough	smoke
3. <u>Cornus</u> <u>stolinifera</u>		Dogwood		smoke
4. <u>Dyssodia</u> <u>pentacheata</u>			sore eyes	smoke
5. <u>Eriodictyon</u> <u>angustifolium</u>		yerba santa	lungs	smoke
6. <u>Euphorbia</u> <u>algomarginata</u>	tava'namu'obi	spurge	sore eyes	smoke
7. <u>Krameria</u> <u>grayi</u>	nakaborinaimp	white ratany	emetic	emetic
8. <u>Nicotiana</u> <u>attenuata</u>	(koapi) koaop tsaw-wap	tobacco	coughs	smoke
9. <u>Salvia</u> <u>carnosa</u>	sigimwiap siguwiipi see-goo-we-up	purple sage	coughs	smoke
10. <u>Symphoricarpus</u> sp.		Snowberry		smoke

Kearney and Peebles 1942:422, 543, 993; Kelly 1939:154, 162; Bye 1972:92, 93.

- Southern Paiute names in parentheses provided by Dr. Pamela Bunte.

as early as 1852 during the early LDS Church thrust into tribal territory. During the following two decades, that initiative continued and expanded, although by no means all Southern Paiutes wanted to work, or could find jobs. Still, "a few of the people occasionally work for white men" by 1873 (Fowler and Fowler 1971:108). Seeking wage labor, and performing it, required Southern Paiute labor gangs to live close to Euroamerican colonies in their ancestral Holy Land. By the 1870s, the typical local group appears to have numbered about 100 individuals. It constituted a labor gang with fluid membership. Unlike the all-male "work gangs" that worried the U. S. Board of Indian Commissioners (Gates 1906:10-11) the Southern Paiute groups included men, women and children.

There was some uncertainty about the sex role definitions of Southern Paiute labor for Euroamericans. At Ivanpah, in 1871 "there are quite a number, who, for the most part, are employed by the miners to carry water to the mines. This idea of labor is not applicable to the men, as they as a general thing are perfectly contented to enjoy the fruits of the labors of their squaws" (Lockwood 1872:74-75). The special need for water among the Ivanpah miners apparently created an early employment opportunity for women: carrying water had been a female task under pre-contact conditions. Some men at the same mine camp did in fact work for the dominant group, "only when compelled by hunger." More likely, they worked when they were able to find jobs which were not culturally defined as female tasks.

The unbalanced sex ratio among Euroamerican residents of mine camps in Southern Paiute territory generated another employment opportunity for native women. By satisfying the sexual desires of miners and millers, Southern Paiute women could obtain scarce food, clothing and other resources. Such occupational specialization carried a biological cost for the native population. "Virtue is almost unknown among them, and syphilitic diseases very common" (Lyle 1872:89). By 1871, not only at mine towns such as Ivanpah, but also among the groups at Las Vegas, Cottonwoods and Pahrump Valley, venereal diseases without doubt, contributed to Southern Paiute depopulation as had epidemics of Old World pathogens.

Even though Mormon farming settlements were developing more ethnic exclusivity than they had exhibited during their early pioneering phases, some continued to employ Southern Paiute labor. St. George was one such community. The early policy of Mormons purchasing native children to rear in LDS families resulted in many of the local Paiute workers in the early 1870s having been reared among Mormons (Lockwood 1872:75).

By the mid-1880s, over 90 percent of the Native Americans in Nevada worked on ranches or in towns and wore Euroamerican clothing (Scrugham 1935:348). Las Vegas Ranch long hired Southern Paiutes to cut hay, haul wood, and work cattle. Men

worked in mines at Searchlight and El Dorado Canyon, where women found domestic employment as maids, laundresses and cooks (Alley 1977:8). They had to eke out a living by continuing to hunt and collect wild plant foods. Most of the Paiute population had already made the cultural transition from pre- to post-colonization conditions. The memorial service for the dead had by 1887 emerged as the principal occasion when Southern Paiutes gathered from many work places. Mourning rites for the deceased persons reinforced distinctive ethnic values (Pioche Weekly Record 7 Sept. 1887:3).

For 30 years, Southern Paiutes in Southern Nevada had to survive on their own, without significant federal government assistance or protection. They persisted by dint of their strategy of seeking wage labor wherever they could find it, and expanding their range of skills. As often occurs where one ethnic group markedly dominates another, women of the subordinated group find paid, albeit menial, employment more successfully than men. This tends to result in members of the dominant group perceiving subordinate group women as more industrious than the men. Such was the situation among the Moapa Band of Southern Paiutes just after the turn of the twentieth century.

"The squaws are very industrious and are better to work than the men," reported a government agent. The women "earn quite an amount making baskets, washing, and working for ranchers down at St. Joe, Overton, St. Thomas, and other places where they get employment." Moapa men worked for ranchers and on the railroad construction gangs of the San Pedro, Los Angeles and Salt Lake Railroad, then completed from Salt Lake City just past Moapa depot (Sharp 1905:244-45).

In 1906 Moapa men who worked for ranchers earned from \$35 to \$40 monthly, but had to feed themselves (Sharp 1907:271), perhaps because dominant group ranchers and cowboys refused to eat with them. The 23 head of cattle issued to Moapa Paiutes in 1887 had long since disappeared, along with any progeny they may have had.

The Kaibab group cultivated seven acres irrigated from Moccasin Spring early in the century. They raised enough to eat during harvest season. The rest of the time they supported themselves by working for dominant group members. Men worked at odd jobs, haying and sheep herding. Only the women could obtain year-round employment--washing for Euroamericans. They earned up to 60 cents per day, a sum spent immediately on subsistence (Brown 1904:329).

At St. George, Mormon ranchers' cattle continued to make the reserved area essentially useless to the Paiutes there. So they, too, depended on wage labor and their economy boomed when they were able to find smelter construction jobs in 1903 (Work 1904:330).

The partially transhumant pattern of pre-contact Southern Paiutes continued early in the twentieth century in the guise of geographic mobility in quest of paid labor. It continues in 1982. Each local population depends on local jobs.

#### CULTURAL CHANGE: FORMAL CONVERSION

During the long dispersion of Southern Paiutes to mining camps and Mormon farming villages and ranches, these Native Americans resorted to what Stoffle and Evans (1976:185ff) label a strategy of ethnic manipulation. For many Southern Paiutes, that strategy involved apparent formal conversion to Mormonism, and acceptance of baptism into the Church of Jesus Christ of Latter Day Saints. The chiefs of the Ute bands earliest and most seriously affected by Mormon colonization adopted the strategy in the 1850s, if not sooner (Bailey 1965:345). Most if not all of the Las Vegas oasis band adopted it in 1856 little more than a year after Mormons initiated missionary activities there. Other Southern Paiutes continued to pursue this manipulative strategy when logic dictated in later decades. Consequently, a single individual can without internal conflict be simultaneously a traditional ethnic religious leader, a Native American Church official, and a baptized Mormon (Stewart 1979:279-80).

Apparently this strategy, plus non-Mormon public opinion swayed LDS Church authorities to persuade Mormon owners of Moccasin Ranch to relinquish a third of the artesian flow from the vital spring there to descendants of its aboriginal owners early in this century. In 1906, the Congress appropriated funds for Indian Office activity among Kaibab Paiutes. In 1909, the federal government reserved a 12 by 18 mile area of land for the Kaibab group of about 80 individuals (Stoffle and Evans 1976:190). This land base allowed a few families to enter the range cattle-raising business (Stoffle and Evans 1976:191).

#### RESERVATION RESOURCE DEVELOPMENT

The federal government did little to help Southern Paiutes develop the scant resources on the small Moapa River Reservation of 1875. The Moapa Band members who resided on the reserved plot, when not working elsewhere, struggled to develop its resources with such cash and Euroamerican technology as they could acquire by working for wages. The approximately 1,000 acre reservation included about 600 irrigable acres, with the right to riverine flow to irrigate them. In 1881 General Land Office surveyors moved the boundary half a mile from where Indian Office surveyors placed it in 1875. In 1895 speculators purchased the vacated area from the state. In 1902 a federal

resurvey confirmed the accuracy of the 1875 bounds. Then one speculator refused to leave, and the Indian Office accepted the 1881 survey (Rambeau and Holmes 1976:1013). As late as 1903 nearby Euroamerican ranchers continued to allow their cattle to roam over the reservation, discouraging Paiute farming. Then the presence of a resident agent of the Office of Indian Affairs intimidated the ranchers.

Meanwhile, the Moapa people did what they could to raise commercial crops on the reserved irrigable lands. They cut juniper poles in the mountains and brush to build the strongest fences they could. They had to go 40 miles to obtain juniper poles because they could not afford to purchase fence wire. Consequently, intruding cattle still broke through their relatively weak fences. Nonetheless, these Southern Paiutes managed to fence and cultivate about 100 acres in the early years of the twentieth century. They raised some wheat, as had their ancestors. They had added barley and alfalfa as a forage crop sold by the cutdried ton (Sharp 1905:244). During the long decades when the Moapa group struggled to protect its cultivated fields, the rest of the irrigable bottomland grew up in sacaton grass, creating a thick sod.

By the early 1900s, the Moapa people had also acquired "quite a number of horses and ponies" although they were not of very good quality (Sharp 1905:245). Presumably their mounts carried them to and from wage labor opportunities. These Southern Paiutes had been saving, slowly building up capital, but they had not been able to afford to re-enter the range cattle business. On the eve of the automotive era, they were seriously short of capital.

By the end of the nineteenth century, the natives who formerly farmed on the Tonaquint (Santa Clara Creek) had disappeared as a functioning group. Any survivors had migrated to Moapa River, mine camps or Mormon farming villages. In the late 1880s a prominent resident of Utah's Washington County purchased much of the Shivwits Plateau as a cattle ranch, and stocked it with several hundred head. One remnant of conservative Shivwits--apparently descendants of those who fought with the Walapais during their war against Euroamerican invasion--remained in its aboriginal territory. Those remnant people raided the cattle. The cattle rancher, then Mayor of Mormon St. George, persuaded the federal government to remove the offending Shivwits to the Santa Clara Valley. To do so, the government appropriated funds to purchase from Mormon colonists what was Southern Paiute land. Ironically, the government appointed the cattle rancher himself to pay out the money for the land, and fence it (Rambeau and Holmes 1976:113).

The Shivwits Reservation did afford the forcibly relocated Paiute patriots one basic feature of the United States program for Native Americans. That was a school where children received English language instruction (Rambeau and Holmes

1976:114). In 1916 President Woodrow Wilson issued an executive order enlarging the reservation area (Rambeau and Holmes 1976:115).

Twentieth Century Land Base Expansion. The first two decades of the twentieth century brought a reversal in the long, and to the Southern Paiutes, devastating process of loss of natural resources. The federal government intervened in several localities to enlarge the area reserved to Southern Paiutes under federal trusteeship. The land for the Santa Clara Valley Shivwits Reservation was not actually purchased until 1903 (Rambeau and Holmes 1976:114). That was the same period when a resident federal representative returned to the Moapa River Reservation for the first time in twenty years, making the reserved area more secure and exploitable by Southern Paiutes (Sharp 1905:270).

In 1911, a Las Vegas resident, Helen J. Stewart, sold ten acres to the United States Government, stipulating that it had to be placed in trust for all Indians of southern Nevada. She sought to provide land on which to establish a day school for the children of Native Americans working in and near Las Vegas, and homes for those workers (Rambeau and Holmes 1976:120). Thus, a private philanthropist provided some leadership, but the school operated for only one academic year. Still, Stewart's sale created a land base for the Las Vegas colony.

In 1912, the federal government acted to enlarge the Moapa River Reservation. Late that October the President issued an executive order adding almost 90 acres. Almost a month later, a new order expanded the addition 128.70 acres. The Moapa Reservation superintendent moved from Moapa to Las Vegas, raising Las Vegas expectations. He was a physician, who thus removed his support from a Moapa population suffering so severely from tuberculosis that the people expected to become extinct. Probably sharing that expectation, in 1914 federal officials allotted Moapa's reserved lands in 12- and 25-acre parcels. The severe bootlegging problem in the valley (Sharp 1905:245; Sharp 1907: 270-271) apparently had not improved during the previous decade (Rambeau and Holmes 1976:105).

Federal officials recognized that some Southern Paiutes continued to occupy portions of their Holy Land. One group ranged near a mountain that Euroamericans labeled Indian Peak. So the President signed on 2 August 1915 an executive order setting aside the Indian Peak Reservation (Rambeau and Holmes 1976:116).

Federal government representatives left these Southern Paiutes who had been attracted to Cedar City during the nineteenth century to members of the Church of Jesus Christ of Latter Day Saints. Not until a Goshute Agency was organized in 1916 did an Indian Office representative have responsibility for Southern Paiutes at Cedar City. Even then, the familiar



difficulty of long distance travel between the agency and Cedar City distinctly limited action by the Goshute agents affecting Cedar City Southern Paiutes. The federal representatives seem to have been content to leave provision of a tiny five and a half acre land base for the Paiutes at Cedar City up to the Church (Rambeau and Holmes 1976:128-29). The people at Cedar City continued to be dependent on Mormon toleration, even after additional areas were reserved elsewhere for their relatives.

On 3 March 1928, an executive order created the Koosharem Reservation. On 11 February 1929, an executive order established the Kanosh Reservation (Rambeau and Holmes 1976:116) for a combined Southern Paiute-Pahvant Ute populace. At its maximum, federal reservation of Southern Paiute aboriginal territory to Southern Paiute use touched but a small fraction of the total. Most Southern Paiute Holy Land remained in federal ownership, particularly within southern Nevada.

Final Depopulation. Many Native American populations reached their nadir population sizes in the 1890s and the first or second decade of the twentieth century. Disease was still so rampant among Southern Paiutes that they appear to have been one of the last Native American ethnic groups to fall to nadir. They began slowly to recover only during the 1930s.

One factor in the poor health of southern Paiutes continued to be lack of household sanitation, combined with lack of access to Western medical service. In 1905-1906, for example, a dozen people in the Moapa Band died, but only five babies were born. That left the Moapa population at an estimated 1239 in mid-1906 (Sharp 1907:271). Construction of the Salt Lake City-Los Angeles Railroad contributed to morbidity and a higher death rate among Nevada Southern Paiutes. Construction workers at Las Vegas, and then new colonists, brought more diseases that killed local Southern Paiutes (Alley 1977:8). The Moapa death rate was on the order of 88 per thousand, an index of the lack of health services and economic-dietary deprivation.

Residents of the Moapa River Reservation continued drinking irrigation ditch water until some time after 1918. That meant that they were subject to repeated infestation with intestinal parasites, and infection with typhoid and other water-borne diseases. People moving in and out of the reservation as they earned their own living by occasional wage labor were also often malnourished. That malnourishment with low resistance to disease accurately indexed the real lack of federal action to preserve a land base adequate to feed the surviving Southern Paiute population.

In 1925, federal officials terminated the relatively short-lived Moapa Day School because of epidemic whooping cough. Then local students had to migrate to Fort Mojave or to

Sherman Institute to board if they wanted to obtain some semblance of a formal education (Rambeau and Holmes 1976:106).

Among the forcibly relocated Shivwits people, health conditions were poor in 1917, with 85 percent trachoma infection, plus rheumatism, colds, and influenza. The 1918 influenza pandemic claimed the lives of several people there (Rambeau and Holmes 1976:115). That pandemic killed so many of the Kaiparowits Band, which still lived in its aboriginal range at a high altitude, that the few survivors abandoned their traditional territory on the Kaiparowits Plateau and emigrated across the Colorado River. They found refuge among the San Juan Paiute, being frightened to remain in their ancestral land because of the many ghosts there after the 1918 mortality (Bunte and Stoffle 1981).

Not until the 1930s did health conditions improve and the population stabilize at Moapa River Reserve. When the trust period on the 1914 allotments ran out in 1941, the entire area was restored to group ownership. That change laid a foundation for later development. A first organizational step followed in the spring of 1942, when the residents adopted a written constitution and by-laws. A Moapa Business Council began to administer reservation people and their scant resources (Rambeau and Holmes 1976:106).

The refugee Shivwits also organized under provisions of the Indian Reorganization Act of 1934. They adopted their constitution and by-laws in 1940. Organization helped relatively little, however, inasmuch as the federal government continued to fail to provide services other than education (Rambeau and Holmes 1976:115).

The Las Vegas Reservation served primarily as a site for very poor quality shelter for a highly mobile working population. A beautification program during the 1930s was essentially cosmetic, yet residents could raise irrigated garden vegetables. Las Vegas Paiutes displayed another manifestation of the group's drive to grow food when two men cleared land on the 10-acre reserve for gardens. The Bureau of Indian Affairs installed a well with windmill and small reservoir. From 1936 until the well was condemned in 1945, Las Vegas Paiutes raised family gardens at the edge of the rapidly expanding city (Alley 1977:16). Then the well that supplies domestic and garden water went dry in 1945 (Rambeau and Holmes 1976:124-25).

Federal Termination. Hard on the heels of World War II, the Congress energetically pursued a policy of ending federal responsibility toward Native Americans. That termination policy resulted in the general abandonment of Southern Paiutes in Utah to their fate as individuals rather than as ethnic mini-enclaves. On 1 September 1954, President Dwight D. Eisenhower signed the act terminating the Shivwits Reservation,

the Indian Peak Reservation, the Koosharem Reservation, and the Kanosh Reservation. Federal trusteeship for reserved lands ended. Inasmuch as the Cedar City Southern Paiutes had never had a federal reservation, Congressmen overlooked them. No language in the act specifically terminated federal responsibility to the Cedar City Southern Paiutes for health services, education, and other services not directly related to trust-status lands (Rambeau and Holmes 1976:116-117).

Indian Claims Settlements. Before the Congress proceeded to terminate federal responsibility for some Native American groups, it had passed in 1946, the Indian Claims Commission Act. The purpose of that act was to allow all Native Americans who thought they had valid claims against the United States to bring them before a special commission for evaluation. In general, the Indian Claims Commission and the appellate courts have awarded Native American groups significant sums for past unfair and unconscionable dealings. The recoveries themselves have been important to Native Americans, and the increased involvement with attorneys brought some unanticipated changes in political power relationships between reservation residents and federal officials (Dobyns 1965).

Claims awards benefited Native American enclaves with reserved lands that could be developed. Such groups as the terminated Utah Southern Paiutes could not invest awards in the same way. The Southern Paiutes as a group received a judgment of \$7,253,165.19 (Rambeau and Holmes 1976:106).

The Moapa River Reservation group's share of that award provided a unique infusion of capital. Then, in 1968, the Business Council refused to renew a lease on reservation farm land. Instead, the Council set out to develop its own commercial farming operation to provide year-round employment for Moapa Paiutes. The Council spent \$100,000 of its claim award to purchase farm machinery. Then it obtained a series of federal grants that financed continued farm improvements (Ostanik n. d.:5), such as lining five miles of irrigation ditches with concrete to conserve water. In time, the Council bought an adjacent ranch, thus increasing its irrigable land to 725 acres. It expanded a tribal cattle herd from 40 to 250 head. In 1972 members of the group voted to set up a leather craft and beading company. They wanted to provide local employment for women, nearly all then not employed with many on public welfare. In 1973, the Council obtained three surplus wooden barracks from the Nevada Test Site and moved them 140 miles to the reservation (Rambeau and Holmes 1976:107). Paiutes converted two into a leather shop. By the end of the decade, 15 people worked on contract production of radio cases and business accessories (Ostanik n.d.:6). Grants from federal agencies established as part of the Great Society assault on poverty assisted in capitalizing the Moapa development effort. Then the Council began to take advantage of the Nixon administrations's initiative to allow Native American enclaves

to contract to carry out services formerly provided by employees of the Bureau of Indian Affairs. Thus, Moapa became the first Nevada enclave to conduct its own summer education program. The Department of Housing and Urban Development made a grant for improved housing. Beginning in 1970, members of the Moapa enclave had, by the end of 1972, finished 32 three-bedroom cinderblock homes (Rambeau and Holmes 1976:108; Ostanik n. d.:9). The availability of good-quality housing attracted Southern Paiutes to reside on the Moapa reservation, adding to the size of the local man and woman power pool.

To the west, only Helen Stewart's stipulation that the ten acres in Las Vegas was sold to the government for Native Americans saved the plot from sale on several occasions. Not until 1965 were electrical utility and telephone service extended to Southern Paiute homes on the tract, which is but a short distance off the main street (Rambeau and Holmes 1976:126). The Indian Claims Commission judgment in favor of Southern Paiutes stimulated Las Vegas organization of a formal local government. A constitution and by-laws were drawn up in 1970, so the Las Vegas Southern Paiutes since then have been represented by a chairman, vice-chairman, and four-member board. The group tried with little success during the 1970s to improve its housing stock (Rambeau and Holmes 1976:127).

Great Society Programs. The principal developmental thrust emerged on Moapa River Reservation. The Council organized a construction company that trained skilled tradesmen on the surplus barracks remodeling, community center and store building, and the HUD housing construction program. This strategy not only raised the collective level of skill in the enclave, but also recirculated federal grant funds within the population. Early in 1978, the Council obtained a grant from the Department of Labor for a two-year program to train workers for an Indian enterprise (Ostanik n. d.:13). That spring the Council obtained a bank loan to finance a pilot half-acre greenhouse for tomato and cucumber production for the Las Vegas and Phoenix urban markets. Astonishingly, the Moapa people never entirely stopped growing food. They plunged into commercial crop production on a large scale. They obtained Department of Housing and Urban Development financing to enlarge their half-acre pilot greenhouse by a 7-acre addition (Ostanik n.d.:14). The Moapa Paiutes market their greenhouse tomatoes as the Jackpot Brand (Ostanik n.d.:15). When hail destroyed the greenhouse, they rebuilt it. Water and clean air are the keys, therefore, to their present and future economy.

In addition to maximizing the resources on their small nineteenth century reservation, the Moapa group set out to enlist political support for recovering part of the large 1873-1874 executive order reservations. In 1979, the Moapa Paiutes petitioned Congress to restore to them 70,000 acres or 4 percent of the 2,000,000 acre 1874 reservation (Ostanik n.d.:4). The Paiutes obtained the effective support of

Nevada's Representative, and in 1980 Congress partially reversed its own chauvinistic action in 1874. It added the requested acres to the Moapa River Reservation. The expansion of the reserved area provides the Moapa enclave with land to raise desert plants important in Southern Paiute herbal remedies, and to graze some livestock. It also carries the reservation boundary westward toward the culturally sensitive and important Arrow Canyon and Mountains, overlooking the proposed IPP right-of-way.

The Moapa commercial agricultural development clearly builds on an enduring Southern Paiute high valuation of growing plants, wild and cultivated, as well as skill at growing them. Wherever and whenever Southern Paiutes have been able to bring a modicum of irrigation water onto arable soil, they have persisted in striving skillfully to grow food and fiber plants. Their psychological ties to growing plants run deep into prehistory.

The Moapa River Reservation Southern Paiutes thus are taking the lead in a tribal economic, social, and cultural renaissance. This resurgence began during the 1960s and gained momentum during the 1970s. In 1982, it takes the form of a petition for a Southern Paiute Agency of the Bureau of Indian Affairs.

The five local Utah populations joined in the Paiute Indian Tribe of Utah by Congressional action in 1980 have joined with the Kaibab Paiute Tribe of Arizona, the Moapa Band of Paiute Indians of Nevada, and the Las Vegas Paiute Tribe of Nevada, calling themselves "the Southern Paiute Nation." Representatives of all of these enclaves characterize Bureau of Indian Affairs services to them as "inadequate," and speak of federal "inappropriate interaction, and unacceptable neglect." The Southern Paiute Nation perceives sheer distance between federal officials and themselves as the major problem in the federal-Nation relationship (Tom, Frye, Tom and Benioh 1982:1). Travel between federal offices and Southern Paiute reservations and populations is so expensive, and long-distance telephone charges so high, that these Native Americans have not been able to develop an informal working relationship with federal officials. Spokesmen for the Southern Paiute Nation describe their treatment as that of "foster children." They view their "unique culture and heritage as Southern Paiute people" as "being seriously threatened" (Tom, Frye, Tom and Benioh 1982:2).

In order to achieve a more rewarding relationship with officials of the BIA, the Southern Paiute Nation seeks establishment of an agency of the Bureau at St. George or Cedar City, Utah (Tom, Frye, Tom and Benioh 1982:4). They view such a federal action as one indispensable step toward economic self-sufficiency, strengthening tribal government, and expanding the ethnic land base.

## CHAPTER V. NATIVE AMERICAN VALUES

Many of the historical and cultural factors that have influenced Native Americans' evaluation of natural and man made resources occurring in the proposed IPP transmission line right-of-way have been discussed in Chapter IV. That discussion is the background which helps explain the responses of contemporary Native Americans.

### KEY HISTORIC RESPONSE FACTORS

Key factors already discussed are:

- (1) These Indian people have lived in the IPP right-of-way area for at least 800 years (Euler 1964: 379).
- (2) During this time, these Indian people have viewed the area as their Holy Land (Spicer 1957: 213) where their ancestors were created.
- (3) During this time, at least until Euroamerican colonization, these Indian people adjusted the fauna and flora of the area to meet numerous human desires.
- (4) The Nungwa people continually adapted their own culture and society to capitalize on the natural environment, and more recently to cope with Euroamerican colonists and severe depopulation.
- (5) During this time, a profound and intimate relationship developed between these Indian peoples and this area. This relationship is with the Holy Land and all of its resources. So while specific places such as a recent burial or a cave that bestows power to a religious person can be pointed out as being sacred, such sites primarily have value as components of the Holy Land itself.
- (6) The emphasis that is placed on defining specific plants, animals, artifacts, or places as sacred or even more sacred than others which are also potentially impacted by a project like IPP is the result of Euroamerican cultural perceptions that are embodied in the NEPA process. In the Indian view, the parts of the Holy Land are not understandable without reference to the whole. Although such a separation procedure is recognized as inevitable by

endanger these resources. Others do not believe that the expression of their concerns will actually protect any Indian cultural resources. Still others may not know about specific resources in a 200 foot right-of-way because their great grandparents had been removed from the area generations ago.

Another factor that has influenced the quality of the Indian responses is previous experience with Native American Impact Assessment (NAIA) projects. Indian groups who have participated in the NAIA process before and found the results satisfactory have expended greater amounts of time on this study. Indian groups who had not been contacted before have responded slowly and with great caution.

Another factor that has influenced the responses is the size and wealth of the Indian groups being contacted. Some groups have a large administrative staff which has the time, resources, and training to participate in an NAIA. Other Indian tribes may have no full time administrators, few available resources, and little experience in dealing with such projects. Our project contains a procedure designed to reduce the effect of the size and wealth factor. We have provided funds so that each tribe can have an Official Tribal Contact Representative (OTCR) on the project. Each of the OTCRs has received payment for his or her time spent on the project and training to help them understand the IPP proposal and the NEPA process.

The following responses were made by Native Americans regarding the potential impact of the IPP proposal on their values. Interviews were conducted between December 17, 1981 and March 23, 1982. Interviewed were Indian people from the Pahrump, Las Vegas, Moapa, the Paiute Tribe of Utah, and the Confederated Tribes of the Goshute Reservation. The procedures used to gather this information and the schedule of the research activity are discussed in Chapter III. Each of the following tribal sections contains a brief discussion of background factors useful in understanding the concerns, a discussion of specific methodology not discussed previously, the expressed concerns, and any mitigation recommendations that are appropriate at this time.

## LAS VEGAS AND PAHRUMP TRIBAL RESPONSES

### BACKGROUND

A Southern Paiute people who called themselves Tudinu (Alley 1977) or Nuwuvi (Rambeau and Holmes 1976) traditionally occupied much of the southeastern California and southwestern

Nevada portions of the IPP right-of-way. According to Dr. Bunte, our project linguist, the first term should be transliterated in English as Turunungwa, where tara means desert or far away and nungwa means people. The second word is also incorrectly transliterated. It is the Paiute word meaning people or Indian people and is transliterated as Nungwa.

While the exact boundaries of the post-colonization local group or groups of Turunungwa is difficult to determine, it clearly included portions of the IPP right-of-way beginning near the Soda Mountains in California, extending through the Clark Mountains and through the southern Nevada portions of IPP until as least just north of Sunrise Mountain. As such, Turunungwu post-colonization territories included approximately one third of the California and one third of the Nevada portions of the proposed IPP right-of-way.

During the historic period many of these Turunungwa Paiutes continued to reside in portions of the IPP study area being employed as miners, ranch hands, and occasionally as private farmers. There are members of Pahrump and Las Vegas families today who lived in or near the IPP right-of-way throughout much of the twentieth century. While the last families probably ceased full time residence in the area by the 1950s, many Indian people continued to utilize places and resources from these traditional lands.

Today, the descendants of the Turunungwa reside primarily at two locations: the Las Vegas Indian Colony and Pahrump Valley. More than a hundred people live at the colony within the City of Las Vegas. It is the only officially recognized tribal unit representing the Turunungwa. Some fifty additional Paiutes reside in Pahrump Valley. Although the colony and valley people are closely related, time and distance have served to separate them as sociopolitical entities. Pahrump Valley Paiutes now desire a separate tribal designation and administration. In 1978, they requested permission to organize as a tribal unit from the Bureau of Indian Affairs. They have now elected a chairman, a council, and administrative officers.

#### METHODOLOGY

Permission to interview at the Las Vegas Paiute Colony and in the Pahrump Valley was requested from Chairman Billy Frye at Las Vegas and Chairman Richard Arnold at Pahrump. It was granted by both chairmen before interviews or public hearings were begun. It was also agreed that each group would receive a copy of the draft report for their official comments before the final copy was released.

The following Las Vegas and Pahrump expressed concerns section is somewhat unusual because these groups have participated in two previous sacred cultural resource studies;



the 1978 Devers-Palo Verde Environmental Impact Statement (Bean and Vane 1978) and the 1979 Allen-Warner Valley Energy System (Bean and Vane 1979) ethnographic study. Both of these studies involved the proposed placement of power transmission lines in traditional Paiute lands. In addition, Stoffle and Evans were the ethnographers working on the Paiute section of those studies. Also, the current IPP study survey was modeled on ones developed and refined during those previous studies. Therefore, the following Las Vegas and Pahrump expressed concerns section regarding the IPP proposal is derived in part from these previous interviews and returned surveys.

Interviews conducted at the Las Vegas Indian reservation and at Pahrump during the IPP study focused on tribal elders. This procedure was selected with the recommendation of the OTCRs from each group. A total of five elders were interviewed. Two elders were male and three were female. Elders accompanied researchers to the IPP right-of-way on three separate all day field trips. Interviews were conducted in either English or Paiute at the request of the elder. Generally, each interview was conducted in bilingual style.

During the 1979 AWVES study, a survey instrument was mailed to all Pahrump and Las Vegas Colony people. This survey asked them to respond to the nine alternative power line corridors proposed in that project. Respondents were given an opportunity to indicate the degree of cultural sensitivity of various traditional places and Indian resources. The 36 respondents to the AWVES survey mentioned a series of concerns for places that are crossed by the IPP power line proposal. Note that intensity of expressed concern for places increases as places nearer to Las Vegas and Pahrump are mentioned. Thus, higher levels of concern are expressed for areas that have more recently been lived in and used by these Indian people.

A 1982 IPP-Nevada survey instrument, based on the 1979 AWVES survey, was mailed to 32 Pahrump and 35 Las Vegas Colony people. Respondents were asked to express the intensity of their concern for a number of culturally sensitive Indian places and resources that might be affected by the proposed IPP right-of-way. Surveys were returned by 14.9% (N=10) of the people. The responses show that the Pahrump and Las Vegas people continue to express higher levels of concern for places that are closer to Las Vegas and Pahrump (see TABLE 19). The expressed concerns for other cultural items shows the same consistency in both the 1979 and 1982 surveys (see TABLE 20). This consistency, suggests that the Pahrump and Las Vegas concerns will remain the same over time. The constant responses also suggest that the survey instrument being used is actually measuring the degree of concern that respondents have for cultural resources.

## EXPRESSED CONCERNS FOR PLACES

Next to the name of places listed on the survey was a 1 to 3 point scale on which Indian people could record the intensity of their concern for a place. A 1 - represents "no concern, a 2 - represents "some concern," and a 3 - represents "much concern."

The following is a listing of places occurring on or near the IPP proposed right-of-way and the average intensity of concern expressed in the 1979 survey. Moving from southwest in the California section of the IPP right-of-way to just below Henderson, Nevada we have: Mojave River (1.7), Soda Lake (1.8), Soda Mountains (1.8), Shadow Valley (2.2), Clark Mountains (2.6), Eldorado Valley (2.7), Ivanpah Mountains (2.8), and the McCullough Range (2.8) (Bean and Vane 1979:6-23).

These average concern scores clearly reflect the pattern mentioned earlier, in which places nearer to current Indian lands receive the greatest degrees of concern. This pattern, however, has some additional complexity within it.

While the average concern scores do represent the general feelings of both the Las Vegas and Pahrump people, as averages they mask differences between the two groups. For example, in-depth interviews found that Pahrump people expressed much stronger concerns for areas located between the Soda Mountains and the Clark Mountains. The explanation for this is that many of the Pahrump Paiute families lived in this area during historic times while most of the Las Vegas people lived further east towards the Colorado River or to the north in the Las Vegas area.

TABLE 19 shows the average intensity of concern of the Las Vegas and Pahrump people for places which occur on or near the proposed IPP right-of-way, according to the 1982 IPP-Nevada survey. Respondents show the same high degree of concern as expressed by tribal elders during IPP spring on-site visits for two areas: Sunrise Mountains and Clark Mountains (2.7). The McCullough Mountains (2.5), Ivanpah Valley (2.4), Eldorado Valley (2.3) and the Black Hills (2.3) do not show quite the degree of intensity expressed by the elders. Frenchman Mountains, an area mentioned by Harrington (1933:5, 52) and elders as a place where there are sacred sites, was ranked quite low (2.1). The following is a site by site discussion of the more important places.

Clark Mountains. The Clark Mountains are an area of considerable concern to the Las Vegas and Pahrump people. Here is found a combination of water, plants, and animals that resulted in extensive traditional utilization of the area. In addition, the Clark Mountains are close to the current homes of living Paiute people. Together, these factors have produced an area of high sensitivity.

Ivanpah Valley. Between the Clark Mountains and the McCullough Range is the Ivanpah Valley. The valley was traversed by trails leading to the Colorado River from living sites such as Pahrump Valley, Mesquite Valley, and Goodsprings Valley. Goodsprings Valley was the birth place of at least one living elder at Las Vegas.

McCullough Mountains. The McCullough Range is an area of high sensitivity because of its diverse natural ecological systems and because of its proximity to the current Las Vegas Paiute reservation (see PLATE 8).

Eldorado Valley. Eldorado Valley was the home for a number of Las Vegas Paiutes during this century. Most of them worked on a ranch located on the western flank of the Eldorado Mountains. The men herded cattle for the rancher in Eldorado Valley. There were separate Indian homes on the ranch (see PLATE 9).

Black Hills. The Black Hills near Henderson are a site of extreme religious importance. According to one Las Vegas elder, the hills contain a cave which is the home of the wind. She implied that if the spirit of the wind is disturbed it will bring harm on people. She was concerned that such an event may occur if the power line is placed too near the cave (see PLATES 10 and 11).

Frenchman Mountains. The Frenchman and Sunrise Mountains (see Chapter IV) are an area of extreme sensitivity. On the eastern side of the Frenchman Mountains is located a well documented sacred cave, Gypsum Cave (Harrington 1933:5, 52). This is a place where religious specialists go to receive power. A less well documented sacred cave is located somewhere in Sunrise Mountain. As recently as 1968 an oral history interview with a Las Vegas Paiute elder indicated the significance of this cave which was called Music Cave (Rambeau and Holmes 1976:127). Depending on the location of Music Cave, at least one and perhaps both of these sacred caves overlook the flat lands across which the IPP proposed power line right-of-way passes.

#### GENERAL CONCERNS FOR CULTURAL RESOURCES

The 1979 AWVES survey provided a list of Native American cultural resources and a 1 to 3 point scale on which Indian people could record their intensity of concern for a resource. The values for each score was the same as that for the place scale discussed earlier. TABLE 20 lists each cultural resource by the average intensity that was expressed for it.

TABLE 19: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF PAHRUMP AND LAS VEGAS CONCERN (1982 IPP-NEVADA SURVEY).\*

INDIAN PLACES	AVERAGE INTENSITY OF CONCERN N=10
Sheep Mountain (south of Jean Lake)	2.70
Sunrise Mountains	2.70
Clark Mountains	2.50
Ivanpah Lake	2.50
Jean Lake	2.50
McCullough Range	2.50
Whiskey Spring	2.40
Ivanpah Valley.	2.40
Hidden Valley (east of Jean Lake)	2.40
Hidden Valley (by Arrow Canyon Range)	2.40
Cathedral Gorge State Park	2.40
Eldorado Valley	2.30
Black Hill (south of Henderson)	2.30
Arrow Canyon Range	2.30
Kane Springs Wash	2.30
Southern Pahrangat Valley	2.30
Historic Town of Delmar	2.30
Rainbow Gardens	2.20
Black Canyon Range	2.20
Dry Lake Range	2.11**
Roach Lake	2.10

TABLE 19: continued.

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Frenchman Mountains	2.10
Dry Lake Valley	2.10
Delamar Mountains	2.10
Delamar Dry Lake	2.10
The Bluffs	2.10
Condor Canyon	2.10
Bennett Pass	2.00
Burnt Springs Range	1.90

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\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

\*\* Excludes 1 "no response"



P-8. View of McCullough Mountains from IPP proposed right-of-way in Eldorado Valley, with barrel cactus and creosote bushes in foreground

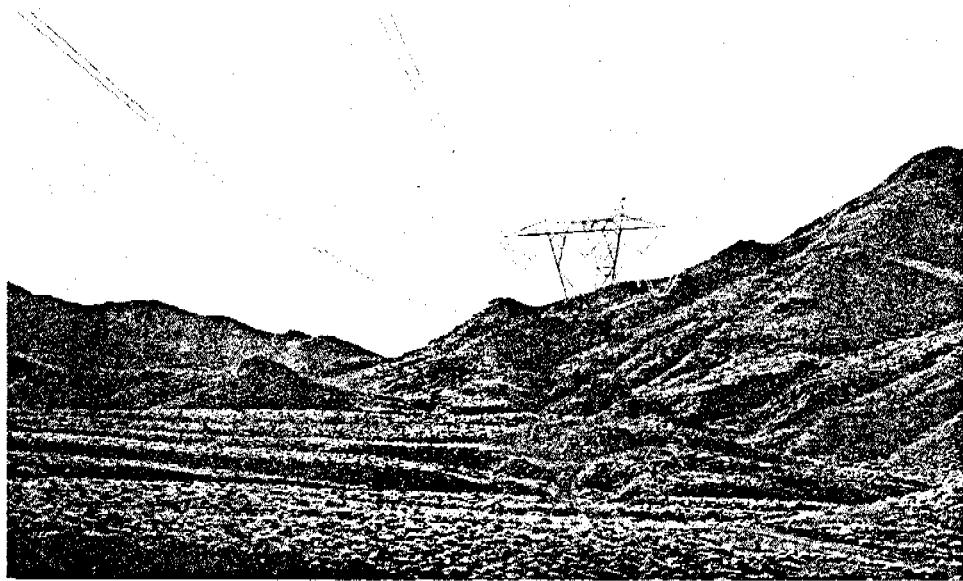


P-9. Existing Eldorado Valley transformer station

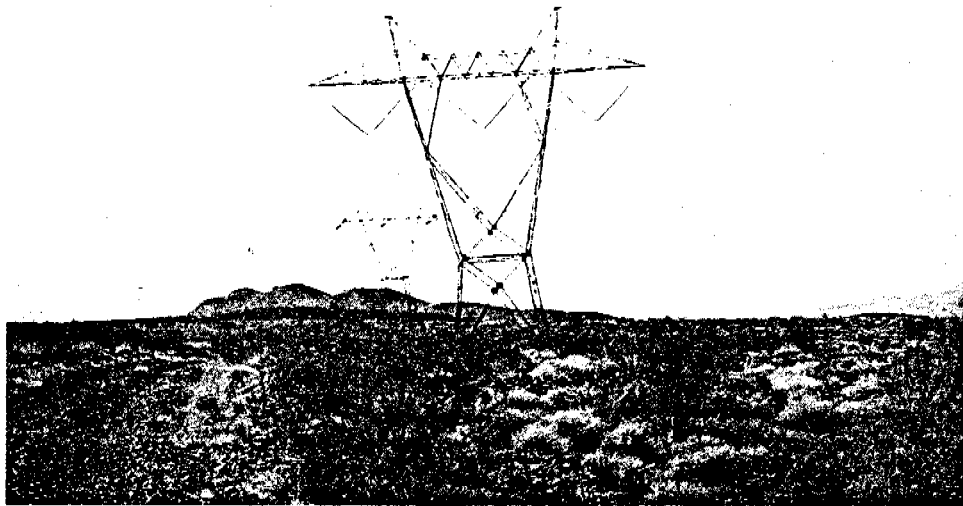
TABLE 20 is based on the results of the 1982 IPP-Nevada survey, mailed out in the spring of 1982, which used the same list as the 1979 AWWES survey of Native American cultural resources and a 1 to 3 point scale on which Indian people could record the intensity of their concern for each resource listed. This table, which compares the degree of intensity of Las Vegas and Pahrump concerns for Native American cultural items expressed in the 1979 AWWES and 1982 IPP-Nevada surveys, shows that the two surveys are consistent in much of their ranking. The highest concern of the Las Vegas and Pahrump tribal groups in both surveys is for springs and burial sites; medicine plants are ranked second in both studies; they both rank birds and small ground animals third; and their lowest concern is for clay and rock mines. The 1982 IPP-Nevada survey respondents gave consistently higher values to Native American cultural resources than did those who returned the 1979 AWWES surveys; many of them gave a 3 to every cultural resource list.

It should be noted that these responses do reflect expressed concerns for the potential impact of power lines and their associated access roads on Indian cultural resources. The region which was considered by the AWWES, however, was broader than that of the IPP proposal. Thus, some of these resources may not be found within the IPP right-of-way. For example, rock art concerns have not been forthcoming from the interviews on the Nevada section of the IPP proposal. On the other hand, the remaining 11 cultural items do appear in the IPP right-of-way and are potentially impacted by the project.

Springs As Cultural Sites. The interrelationship between the cultural items mentioned in TABLE 20 is another consideration when evaluating the data. The strong expressed concerns for springs, for example, illustrates the interrelationship between cultural resources and also the difficulty of separating them out in either a survey or interview for the purpose of establishing a hierarchy of concerns. Springs are an interesting resource because to some people they may not even appear to be a cultural item because they occur naturally. They were, however, the source of significantly different habitats in the arid environment, causing a concentration of natural plants and animals. As one of the only sources of water in the desert, springs were utilized as areas for planting Native American cultigens. As the major points of hunting, gathering, and plant cultivation, springs became focal points of Native American activity. Springs often became sites of reoccurring religious ceremonies focused on birth, rites-of-passage, death, curing, and hunting. Connecting these culturally significant places were trails. The whole complex was often preserved in religious songs. Springs were often so important that local groups referred to themselves by the name of a major spring within their territory. Ethnographers who became aware of this fact



P-10. Existing HVTL across edge of Black Hills looking south



P-11. Existing HVTL in Black Hills near Henderson



TABLE 20: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY OF LAS VEGAS AND PAHRUMP CONCERN (From 1979 AWWES and 1982 IPP-NEVADA SURVEYS).\*

CULTURAL ITEM Ranked by IPP-Nevada Responses	AVERAGE INTENSITY	
	AWVES N=36	IPP-Nevada N=10
Springs	2.8	3.0
Burial Sites	2.8	3.0
Medicine Plants	2.6	2.9
Food Plants	2.5	2.9
Large Ground Animals	2.3	2.9
Small Ground Animals	2.5	2.8
Birds	2.5	2.8
Rock Art	2.1	2.8
Religious Areas	2.6	2.7
Basket Plants	2.3	2.7
Trails-shrines	2.6	2.6
Clay/rock Mines	2.0	2.4

\*"No concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

elicited discussions of traditional activity and territory by asking the question, "Where was your families' water." Thus springs became central in the definition of both group and individual identity. When Pahrump and Las Vegas Paiutes expressed concern for springs, they often are combining a variety of concerns ranging from burials to medicinal plants into a single statement.

#### EXPRESSED CONCERN FOR PLANTS

Direct interviews have provided great detail regarding the types of plants about which Pahrump and Las Vegas people have expressed concerns. The following list of plants is illustrative of the types of concerns rather than a comprehensive list (see Chapter IV). A spring on-site visit provided additional plant information which included the Indian names for many plants found in portions of the IPP right-of-way as it crosses Las Vegas and Pahrump traditional lands (see TABLE 21).

Plants mentioned with great frequency are tamar, an Indian spinach (Chenopodium berlandieria and Stanleya pinnata); "yucca tree;" mesquite (Prosopis juliflora); devil's claw (Proboscidea sp.); creosote bush or "greasewood" (Larrea tridentata); pinyon pine (Pinus sp.); barrel cactus (Echinocactus sp.); prickly pear cactus (Opuntia sp.); and Indian tea (Ephedra viridis) (see Chapter IV: 217).

Other plants mentioned during interviews by one or more people include "wild grasses;" Joshua tree (Yucca Brevifolia); willows (Salix sp.); a small willow-like bush with red berries called syluyump; ocotillo (Foqueieria splendens); wild wheat; water berries called pahop; reeds used to hold willows together in baskets; and acorns (from Quercus sp.).

In addition, on-site visits with the three tribal elders revealed a number of Indian food and medicine plants located in the IPP right-of-way. For many of these there is only the Indian name at this time. During the spring on-site visit a botanist was present to help identify these additional plants.

No listing of plants, no matter how complete, can convey the intensity of the concerns that have been expressed in the direct interviews. The following quote from a Las Vegas elder briefly illustrates this concern for plants.

Tamar is a green that grows in the whatcha-call-em (pause) let's see--in the ponds in the springs. Them little springs. Yah! Yah! they grow in there. They're good--and there's another kind of spinach too. Oh! We got all the greens you know. If the

TABLE 21: PLANTS OF CONCERN TO SOUTHERN PAIUTES IN THE ROACH  
LAKE-MCCULLOUGH MOUNTAIN REGION OF NEVADA.

BOTANICAL NAME	NUMIC NAME	COMMON NAME	USE
1. <u>Cassia armata</u>		senna	
2. <u>Echinocereus engelmannii</u>	usivwuits	hedge-hog cactus	food
3. <u>Encelia virginensis</u>		brittlebush	
4. <u>Ephedra nevadensis</u>	tutupi tutuupi utuupi	Mormon tea jointfir	drink
5. <u>Eriogonum inflatum</u>		desert-trumpet bladderstem Indianpipe weed	
6. <u>Eriogonum reniforme</u>		buckwheat brush	
7. <u>Euphorbia albomarginata</u>	tavipakaxi	spurge rattlesnake-weed	
8. <u>Hilaria rigida</u>		big galleta	
9. <u>Hymenoclea salsola</u>		burrobush	
10. <u>Krameria parviflora</u>		range ratany	
11. <u>Larrea tridentata</u>	yatamp yatamp	creosote bush "greasewood"	food
12. <u>Lycium andersonii</u>	u'up	squawberry	food;drink
13. <u>Mentzelia albicaulis</u>	ku'u	blazing-star stickleaf	food
14. <u>Nicotiana trigonophylla</u>	koapi nangwakoap	tobacco	smoke
15. <u>Opuntia echinocarpa</u>		grizzly-bear cactus	

TABLE 21: continued.

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16.	<u>Oryzopsis hymenoides</u>	wa'ai	ricegrass	food
17.	<u>Penstemon pseudospectabilis</u>		beardtongue	medicine
18.	<u>Physalis crassifolia</u>		groundcherry	food
19.	<u>Salizaria mexicana</u>		bladder-sage "paperbag bush"	
20.	<u>Salvia columbaryia</u>	saywav	chia sage	food
21.	<u>Stipa speciosa</u>		needlegrass	
22.	<u>Yucca schidigera</u>	tachampi uusivi uusiv	yucca	soap shampoo fiber

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Sources: Boyd field notes; Bunte and Stoffle field notes; Kearney and Peebles 1942.

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line comes through here (pointing to the IPP right-of-way) it's going to bother those tamars.

That tamar they use it for medicine. They make it into a powder, you know, for sores and thing like that. Oh! my people they do anything, you know. It's like the Chinese--now, they want to know what herbs and everything, you know, like an Indian. This Tamar--is that useful!

That mesquite tree--you use the bark when you have diarrhea--you boil it and you drink it. And the root--you drink that too, see? The root, that's good medicine. The leaves--they're good for if you get stung by a bee. All you gotta do is pull out some of those leaves from mesquite bush, you know. Suppose an ant stung you right here. You get that leaves from that mesquite tree. You put it in your mouth. You chew it. The leaves get soft--the pain will go away. It's very useful. And the bean juice--you can dry it up--pound it up--make candy for children. Well the children--they like it in big chunks, you know. Oh! you got to eat it like candy, you know.

#### EXPRESSED CONCERN FOR ANIMALS

Direct interviews have provided detail regarding the types of animals about which Pahrump and Las Vegas people have expressed concerns. The following list of animals is illustrative of the types of concerns rather than a comprehensive list (see Chapter IV: 74-76). No detail ethnozoological studies have been conducted among the Southern Paiutes and such studies remain beyond the scope of this study.

The most commonly mentioned animals for which concerns were expressed are: jackrabbits, cottontail rabbits, desert tortoises, lizards, eagles, and desert bighorn sheep. Also mentioned were bears, coyotes, chipmunks, bobcats, deer, pheasants, doves, and quail.

Singled out for specific concern were the eagle and the desert tortoise. Both continue to have a special emotional and/or religious significance. Such special concerns emerged in interviews during the 1978 and 1979 studies, and 1981-82 IPP interviews. Eagles are considered sacred by most Paiutes and by most Indians. Power lines are seen as a special threat to eagles and other large birds of prey such as hawks. While dead eagles are often picked up by Indian people and their feathers used to make religious items, the power from living eagles is much stronger according to one Paiute religious leader. In addition to the direct threat of the power line, access roads bring more hunters and more off-road vehicles, both of which cause the death of tortoises and birds of prey.

## EXPRESSED CONCERNS OVER POWER LINES

Proposal to Build More HVTLs. The general response of the Las Vegas-Pahrump respondents to the 1982 IPP-Nevada survey question, "How do you feel about the proposal to build more transmission lines through your traditional lands?" was negative; 50% (N=5) were strongly against the proposal. Another 40% (N=4) felt that transmission lines are necessary but still didn't want them on their traditional lands. As one of the latter respondents said, "I know we need more power lines and transmission. Don't like it coming through the traditional lands." One respondent (10%) said "It would be permissible as long as they didn't tear the country up."

Seeing Large Power Lines. In response to the 1982 IPP-Nevada survey question, "What are your feelings when you see large power lines and their towers crossing the desert valleys or mountains?" 40% (N=4) of the Las Vegas-Pahrump people thought that power lines and towers detract from the beauty of the desert and make it look cluttered and ugly. Another 20% (N=2) said that these structures made them feel bad or cry, and one respondent suggested that the power lines would harm animals and plants. On the other hand, 20% (N=2) said they felt little or no concern. Only one person made a positive response, "They are a necessity nowadays for all."

## MITIGATION

Mitigation In General. The Indian people and official leaders contacted during the three NAIA visits at Pahrump and Las Vegas have revealed a clear opinion that Indian people can not directly benefit from these projects and can only lose portions of their traditional lands and resources. Only direct employment during the construction of the line or reduction of energy costs to Indian people are viewed as means of economically reimbursing Indian people.

The following are mitigation recommendations suggested during the 1978, 1979, and 1982 interviews and 1982 returned surveys. In addition, each tribal group has had the opportunity to discuss this report and decide if they would like to officially endorse any particular combination of mitigations regarding the IPP proposal. The Pahrump tribal response is listed at the end of this mitigation section.

Mitigation of Indian Tools and Habitation Sites. In response to the 1979 AWWES survey question, "If Paiute tools or living sites are uncovered by power line construction, what should be done with them?" 39% (N=7) said these should be returned to the Indians; 22% (N=4) said they should be studied by a museum; 11% (N=2) said that they should be left alone; and

22% (N=4) made no response to the question. In response to a similarly worded question (see TABLE 22) in the 1982 IPP-Nevada survey, 40% believed they should be returned to the Indians; 30% (N=3) felt they should be placed in a museum; and 30% (N=3) felt they should be left undisturbed.

When the two sets of survey responses are compared, there is a consistently expressed desire to have Indian artifacts returned to the Indian people. While no official tribal policy has currently been established by the Las Vegas Tribe, these responses suggest that artifacts found during IPP groundbreaking activities are desired. The Pahrump people have asked for the return of their artifacts (see resolution below).

Mitigation of Indian Burial Sites. In response to the IPP-Nevada survey question, "If the burial sites of Indian people are uncovered by construction, what should be done with them?" 50% said go around and leave them alone, 40% said to rebury them, and 10% said give them back to the Indians. These are almost identical responses to those received during the AWVES.

Listening to Indian Opinion. In response to the IPP-Nevada survey question, "Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?" 50% (N=25) said that the utility companies will not listen. One of these respondents added, "they won't listen to people, especially the Indian people." Another 20% (N=2) of the respondents said, "I hope so." One respondent (10%) felt that Indians' opinions were heard but only because it is required by law. Another felt it was only a matter of record to the utility company. One person made a moderate comment:

I think the Indian people have a right to hear the opinions [of the utility companies]. And the utility companies also should have the right to hear Indian opinions--what both sides have to say.

Official Pahrump Tribal Mitigation. After reviewing this study, the Pahrump Tribal Chairman, wrote a letter of response discussing the report and recommending certain mitigations. A copy of that letter is contained in Appendix D-1. The following are specific mitigations contained in that letter.

When this project gets underway the Indian people from the Pahrump area are very much concerned with the discovery of any artifacts, burial sites and their disposition. It is our feeling that any artifacts discovered in our "traditional areas" would be sent to the Pahrump Band of Paiutes, so that we can begin to preserve significant parts of our past.

Any burial sites which are located, we feel that we

would be notified of such findings, so that we can instruct I.P.P. staff/workers how to properly handle such discoveries in accordance with our beliefs.

Since numerous plants in our traditional areas have been and still are very important to us, we would recommend to avoid any plants wherever possible during all phases of this construction.

When any type of construction or ground breaking is instituted, the possibility of discovering artifacts and burial sites of any kind is very high and this remains a very sensitive area to the Pahrump Paiutes. It is for this reason that we request to have on-site observation by at least one (1) tribal member during any construction, ground breaking or any kind of archeological research conducted.

#### MOAPITS-PAHRANAGAT PAIUTE

#### BACKGROUND

Contemporary Southern Paiutes typically employ the term Moapits to designate these members of the ethnic group who live much of the time on the Moapa River Reservation, or were born there, or use it as a residential base. Like other Southern Paiute enclaves, the Moapits have had a fairly fluid membership. Many federal bureaucratic pressures foster increasing stability of enclave membership, but Southern Paiutes continue to take a very pragmatic approach to life and avoid defining membership in any economic unit too narrowly for survival. The Moapits may be considered, therefore, a functional post-colonization local group or band.

One of the historic components of the Moapits consisted of a small number of survivors of the Southern Paiute group labeled the Pahrnagat Band in the anthropological literature (Kelly 1934:554). As indicated in the ethnohistorical chapter, those Southern Paiutes who utilized resources in Pahrnagat Valley planted at least some of their food crops on Moapa River. Moapa informant comments in 1870, 1900, and 1934 indicated that there was aboriginally, no real distinction between Moapits and Pahrnagats, and the terms Pahrnagat and Moapa as names for Southern Paiute social groups actually were taken from Euroamerican place-name usage (Kelly 1934:554-555). As indicated in the ethnohistorical chapter, Euroamerican violence against Southern Paiutes attempting to live in camps satellite to mine camps and farming settlements in Pahrnagat Valley so frightened the few survivors that they moved south in 1875. Since that time, any Southern Paiutes who belonged to the Pahrnagat post-colonization band have functioned as



Moapits. Consequently, authors of this report consulted Moapits spokesmen descended from the former and relatively short-lived post-colonization Pahrnagat band in order to learn about Southern Paiute concerns over the northerly portions of the IPP project area.

Kelly (1934:Map, 554-555) places the southern boundary of the post-colonization Moapa group as extending from the Colorado River at Callville in a north westerly direction past the north side of Sunrise Mountain, then along the southern tip of the Las Vegas Range and the Sheep Range. The northern boundary, suggested by Kelly, then passed in a straight line due east from near the current Maynard Lake to the Beaver Dam Wash. The eastern boundary follows Beaver Dam Wash to the south, crosses the Virgin Mountains and proceeds along their eastern flank until reaching the Colorado River.

While the placement and meaning of these post-colonization boundaries is open to debate, it is clear that a major portion of the IPP proposed right-of-way falls well within the post-colonization "territory" of the Moapits. More specifically, oral history and documents suggest that the Moapits have continuously utilized that portion of the IPP right-of-way beginning near the Dry Lake Range in the south, extending northward through the valley between the Arrow Canyon Range and the Sheep Range and ending at the southern confluence of the Delamar and Pahrnagat Valleys.

#### METHODOLOGY

Three full days, January 13th, 14th, and 15th, were spent on the Moapa Indian Reservation by Stoffle, Bulletts, and Phil Swain, the OTCR from Moapa. The first day was spent with Mr. Swain visiting sites of importance in the Arrow Canyon area. On the morning of the second day interviews with two tribal elders (a man and a woman) were arranged by the OTCR. That afternoon, one of the elders and the OTCR accompanied Stoffle and Bulletts to an on-site visit in the Arrow Canyon Valley. The third day involved a public meeting at the Moapa Tribal Headquarters which was attended by Moapa Chairman Preston Tom and community members.

Tribal elders who were interviewed are recognized for their knowledge of the old days. One elder is currently working with a study team from the Nevada State Museum and was an archaeology field worker during the MX environmental studies. In addition, one of the tribal elders from Las Vegas who had lived for extended periods at Moapa expressed concerns for resources in the Moapa area.

The 1982 IPP-Nevada survey instrument was sent to all 89 adult members of the Moapa Tribe. Four members (4%) returned

the questionnaire. The average age of these respondents was 38 years. Three respondents said they lived on the reservation. They had been there for an average of 23 years. The fourth person did not answer this question.

#### EXPRESSED CONCERNS FOR PLACES

When asked to rank the degree of their concern for places along the IPP right-of-way, Moapa respondents expressed strong concerns for the Southern Pahrnanagat Valley (3.0), Delamar Mountains (3.0), Arrow Canyon Range (2.75), Hidden Valley (2.75), Kane Springs Wash (2.75), Delamar Dry Lake (2.75) and the historic town of Delamar (2.75). In TABLE 22 these responses can be compared with those for places that were not within traditional Moapits territory. These responses reflect the general pattern of areas farther away and outside of traditional territory receiving lower levels of expressed concerns. The following section discusses the importance of these traditional lands, especially the Arrow Canyon Valley.

Arrow Canyon Valley. Concerns for places were focused on the north-south orientated valley located just west of the Arrow Canyon Range. This valley will be referred to as the Arrow Canyon Valley in this report but it should not be confused with the Arrow Canyon that received so much attention in the MX environmental studies.

The probable historic relationship between the Indian people who are called Moapits and those called Pahrnanagat was just discussed. It is necessary to clarify this relationship because it helps us understand the strong expressed concerns for Arrow Canyon Valley on the one hand and the few archaeological sites recorded in the IPP right-of-way on the other (Tucker, Christensen, and McEnany 1982).

Moapa Indian informants in the early 1930s told Kelly that Pahrnanagat was derived from the same name as the Moapits used for themselves; Paranayi, which is said to mean "those who stick their feet in the water" (Kelly 1934:544). The name Moapa, which probably derived from moa meaning mosquito and pah meaning water, had also been attached to the Paiute peoples of the Moapa River Valley. Given a choice of names Kelly decided to use two geographic place names (Moapa and Paranagaut) rather than the single traditional subtribe self name (Paranayi).

The traditional subtribe apparently split during the colonial period into two groups oriented toward different types of employment. One labor camp gang depended on mine and mill wages near Hiko. The other labor camp group persisted in trying to hold remaining farms on the Moapa River Reservation but was economically dependent on wages from Euroamerican farmers and ranchers in Moapa Valley.

TABLE 22: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF MOAPA CONCERN (1982 IPP-NEVADA SURVEY).\*

INDIAN PLACES	AVERAGE INTENSITY OF CONCERN N=4
Southern Pahranaagat Valley	3.00
Delamar Mountains	3.00
Arrow Canyon Range	2.75
Hidden Valley (by Arrow Canyon Range)	2.75
Kane Springs Wash	2.75
Delamar Dry Lake	2.75
Historic Town of Delamar	2.75
Dry Lake Range	2.66**
Cathedral Gorge State Park	2.50
Dry Lake Valley	2.50
Condor Canyon	2.50
Frenchman Mountains	2.25
Sunrise Mountains	2.25
Sheep Mountains (south of Jean Lake)	2.00
Jean Lake	2.00
Hidden Valley (east of Jean Lake)	2.00
Rainbow Gardens	2.00
Burnt Springs Range	2.00
The Bluffs	2.00
Black Canyon Range	2.00
Bennett Pass	2.00

TABLE 22: continued.

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Roach Lake	2.00**
Clark Mountains	1.75
Whiskey Spring	1.75
Ivanpah Lake	1.75
Ivanpah Valley	1.75
McCullough Range	1.75
Eldorado Valley	1.75
Black Hill (south of Henderson)	1.75

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\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

\*\* Excludes 1 "no response"

If our interpretation of the data is correct, it means that the Arrow Canyon Valley was the center of the Paiute subtribe territory before colonial disruption. The subtribe may have been called Paranayi. With full time agricultural settlements on the Moapa River and summer agricultural camps in the Pahranaagat Valley there would have been no reason for Paranayi villages to exist in the nearby Arrow Canyon Valley. The valley, therefore, was probably used for hunting and gathering and travel between camps so it was lived in for only brief periods. This use pattern would account for the scattered archaeological remains (see Chapter IV:187).

Even though Arrow Canyon Valley was not lived in on a full time basis it was still a place of great importance because of the unique plants and animals it contained and because of its central location between the two major agricultural areas of the Paranayi. If we accept the premise that the Paranayi Paiute subtribe existed, then their total territory would have been quite productive in terms of diversified food resources. At the lower elevations from the Colorado River to the Arrow Canyon Mountains there existed a climate and water resources for great fields of cultigens and the gathering of desert plants that grow between 1100 feet at the Colorado and the 2000 feet elevation of Arrow Canyon. In the center of this Paranayi territory was the 2518 feet high and dry Arrow Canyon Valley surrounded by the 5100 feet high Arrow Canyon Range on the east and the 9912 feet high Sheep Range to the west. The high desert plants of the valley would combine with the mountain plants and animals to make special contributions to the Paranayi diet. To the extreme northeast the 4000 feet high Pahranaagat Valley provided late season cultigens grown in its many oases. The high elevation valley grasses provide the appropriate environmental conditions for a new species of animals to be added to the Paranayi diet, the antelope. In the 8,000 to 9,000 feet high mountains surrounding the valley were outcrops of minerals and additional types of food and medicinal plants.

Certainly, from an ecological view point, this reconstruction of Paranayi life is logical. A single subtribe which controlled all of these diverse ecological zones and their respective plant and animal resources would have had a better balanced economy than would have two separate subtribes where one only high zone resources and the other group controlled only low zone resources. The existence of a single subtribe also argues for the critical social and cultural centrality of the Arrow Canyon Valley in the lives of the Paranayi.

Given a single subtribe with a portion of its population separated into two agricultural centers for much of the year, there would be a strong rationale for the separate social units to meet periodically and exchange information and goods. These meetings would probably have been scheduled so that the united

gathering could take advantage of ripening foods and new animal populations. In addition, a central location would be an advantage by minimizing travel time and effort.

Arrow Canyon Valley has each of these characteristics. It is composed of ecological zones that are intermediate between the Pahrnagat Valley area and the Moapa River Valley. It is also centrally located between the northern and southern agricultural valleys.

Regular meetings in a central valley call for the presence of a major camping area (see Chapter IV:71). One Moapa elder discussed just such an area. According to her, there was a place of great importance to Indian people located at the northern tip of the Arrow Canyon Range. This area's importance as a meeting ground continued during her childhood. The centrality of the place to Paranayi territory is obvious. It is fifteen miles from the Colorado River and twenty three miles from the Indian oasis at Alamo in the middle of Pahrnagat Valley. The camping location is also about five miles from the head of Arrow Canyon, a site of extreme cultural significance.

Comments by Moapa elders can be combined with ethno-historical documents to further understand the importance of Arrow Canyon Valley and its functions during the pre-colonial and early post colonial periods.

The Arrow Canyon Valley meetings probably occurred in the spring, summer, and fall because the Pahrnagat Valley oases were probably abandoned during the winter months. Trade was probably a major function of each meeting. The goods exchanged, however, probably changed with the seasons. From the Pahrnagat Valley area came dried antelope meat, processed antelope hides, late season cultigens, and high zone natural foods. Major pigment sources existed in the Irish Mountains. From the Moapa River Valley come early season cultigens, salt from the major cave near Overton (now flooded by Lake Mead) and low altitude ecological zone natural foods. Perhaps fish came up from the river. Arrow Canyon Valley provided the visitors with large desert tortoises, abundant rabbit populations, two varieties of mountain sheep--with the smaller variety in the Meadow Valley Mountains--and a great variety of natural plants.

Surplus hides, dried meat, and pigments could be traded by the Moapa River Valley people. One obvious outlet for their high altitude ecological zone foodstuffs, animals, and pigment would be the major Paiute trading center located at the confluence of the Santa Clara River and the Virgin River. Here goods from the Hopi, Walapai, and Mojave found their way into the Paranayi society as noted in the ethnohistorical chapter. Comments by a Moapa elder while visiting the IPP right-of-way in the Arrow Canyon Valley, help round out the seasonal view of the area.

See--they eat that kind. and this has also a crop on it. See there's three things right here--four things including now what Indians eat. See that's why they were camping in this area. But the camping ground is not known because they camp here and there. Moved around where there was food. That's where they sat--the Indians were here preparing for the winter. Then, after when they get it done for the winter time, they go back down below Overton--towards Nelson and all down in that country. Then they go down for winter out.

#### GENERAL CONCERNS FOR CULTURAL RESOURCES

In the IPP-Nevada survey, Moapa people were asked to record the intensity of their concern for certain types of cultural items. TABLE 23 presents the average intensity of concerns expressed. Consistent with the Las Vegas and Pahrump responses already discussed, there is a very strong concern for springs among the Moapa people (3.0). The role of springs as cultural sites has already been discussed in this chapter and need not be repeated.

#### EXPRESSED CONCERN FOR PLANTS

Direct interviews have provided information regarding the types of plants about which Moapa people have concerns. The following list of plants is illustrative of the types of concerns that have been expressed rather than a comprehensive list which would appear more like that presented in Chapter IV. The spring on-site visit provided the scientific and common names for many other plants previously recorded by the Indian name only (see TABLE 24, 25).

The following list of plants is presented first with the English common name used by the Native American consultants, then followed by the scientific name when known, which is followed by the Indian word for the plant when this is known: squawberry (Rhus trilobata) called sauvi, Indian potatoes (probably Solanum spp.) called turasi, catclaw (Acacia greggii), barrel cactus (Echinocactus spp.), and a small cactus called "eat and run" because of its laxative effects.

One Moapa elder commented on the relationship between the changes and the weather and Native plants when he said:

We're talkin' about the food and that. Lot of the food they dried up and they's not coming back--back up--no more rain.

TABLE 23: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY OF MOAPA CONCERN (1982 IPP-NEVADA SURVEY).\*

CULTURAL ITEMS	AVERAGE INTENSITY OF CONCERN N=4
Springs	3.00
Religious Area	2.75
Burial Sites	2.75
Trails-Shrines	2.75
Medicine Plants	2.50
Food Plants	2.50
Clay-Rock Mines	2.50
Basket Plants	2.25
Rock Carvings-Paintings	2.25
Small Ground Animals	2.25
Large Ground Animals	2.25
Birds	2.25

\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.



While talking about Indian potatoes, they were compared with white potatoes and the discussion reflected feelings about Indian food in general.

It's identical (Indian potatoes) like that (White potatoes). The only thing, they're about as big as your thumb. But they're really mild. Course those days everthing was mild, you know. Everything delicious, those days, you know, they don't have McDonalds.

Great concern was also expressed that in some cases Euroamericans were taking and using Indian plants while in others the Indian people were being restricted in their use of the plants. One elder commented while others agreed

. . . that's where a lot of stuff like that grows and they use to tell me they picked it and some still do. I've seen it but I don't know how they make it. Even now, they've got the white people making jelly out of that. This guy bought a bottle like that. They give me some--a little bit of it--they got it over there. They make a jelly out of that see. Now all those white people from Vegas--Hell!--they're out there, pickin' everything. So that's the thing that hurts the Indians' feelings--those things. The only thing now, they (Indian people) don't want the white people to find out about the plants. That's why they (Indian people) stop picking some plants--so white people don't undermine that.

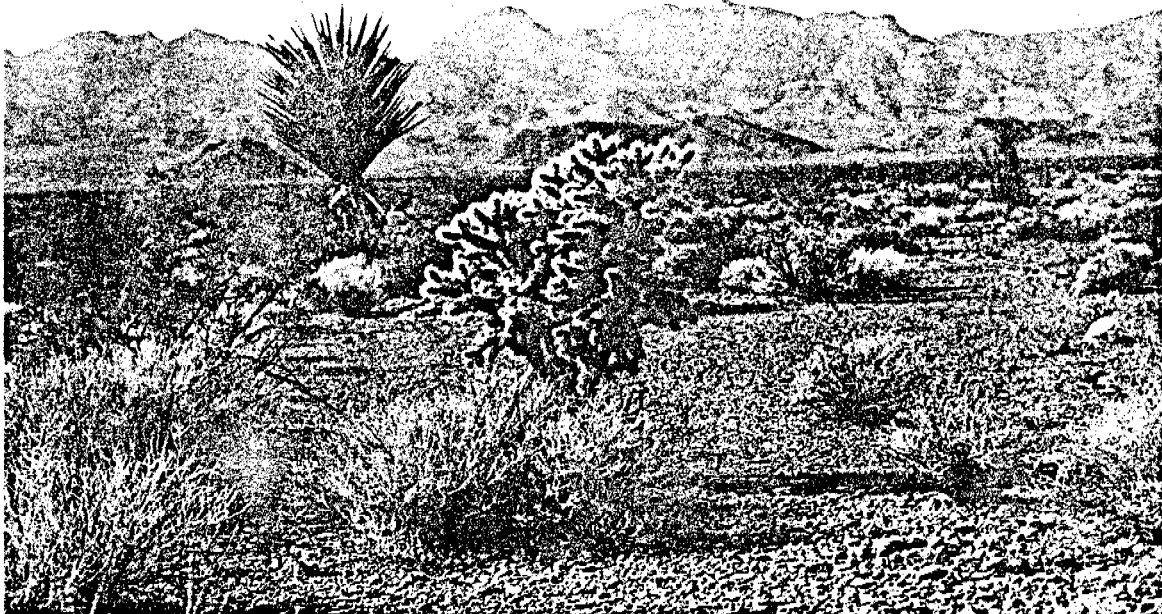
Later during the interview, the discussion turned to regulations that have been placed on Indian people's rights to use plants. One elder noted that

Now if I want to get some lumber--and I'll get one next month--I can't go up any place up here and cut a bush or anything like that. I got to have a desert resource permit from the BLM. It is needed for anything--berries or anything like that. Pickin' the berries you gotta have a permit that's the same as pinenuts but picking the pinenuts you're s'posed to have a permit too. You're only allowed twenty pounds, I think it was. You remember here along 6--10--12 years ago it came out where you're only s'posed to pick 10 pounds. That's only what the BLM permits, that's all! An then you have to have a permit from every where you're gonna go. Those people that started the BLM first started it, they was takin' it out on the Indian. I went to the BLM people and they said they was not taking it out on the Paiutes. But I told them about it, see. I mean they was nice enough to me but--Well, hell that's your food! There's a lot of them (Indians) said, "Well, the heck with it."

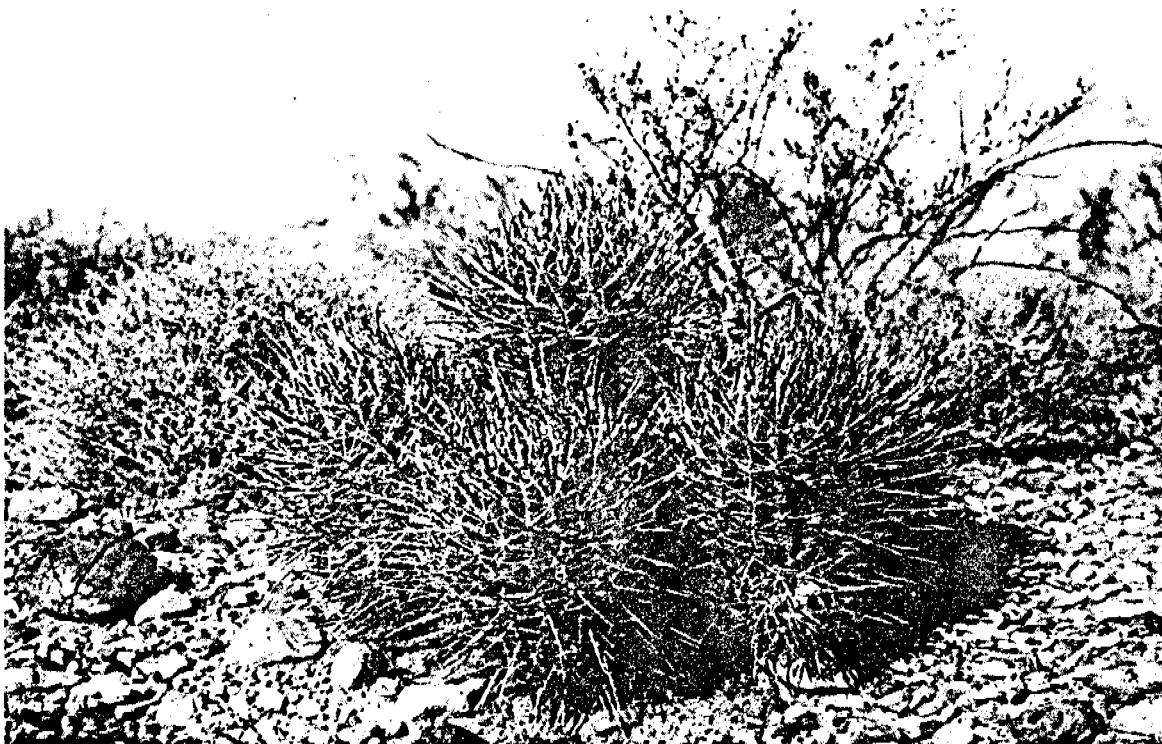
TABLE 24: PLANT SPECIMENS COLLECTED OF CONCERN TO SOUTHERN  
PAIUTES IN THE ARROW CANYON-MOUNTAIN REGION OF NEVADA

BOTANICAL NAME	NUMIC NAME	COMMON NAME	USE
1. <u>Ambrosia dumosa</u>		ragweed	
2. <u>Atriplex confertifolia</u> oavi		shadscale spiny saltbush	
3. <u>Chilopsis linearis</u>		desertwillow	
4. <u>Hymenoclea sp.</u>		burrobush	
5. <u>Krameria grayi</u>		white ratany	
6. <u>Larrea tridentata</u>	yatamp yatump	creosote bush "greasewood"	food
7. <u>Lycium andersonii</u>	u'up u'upi	squawberry	food drink
8. <u>Menodora spinescens</u>			
9. <u>Mentzelia sp.</u> <u>oreophila</u>	ku'u	blazing star stickleaf	food
10. <u>Orobanche cooperi</u>	tu'u	broomrape	
11. <u>Pluchea sericea</u>		arrowweed	
12. <u>Prosopis pubescens</u>	kwiyaṛ	screwbean mesquite	food
13. <u>Rumex hymenosepalus</u>		dock wild rhubarb	food
14. <u>Sporobolus airoides</u>		bunchgrass alkali sacton	
15. <u>Suaeda torreyana</u>		seepweed quelite-salado	food
16. <u>Stanleya pinnata</u>	tamarṛ nambitṛ	desert plume "Indian spinach"	food
17. <u>Thelypodium</u> <u>integrifolium</u>			

Sources: Boyd field notes; Bunte and Stoffle field notes;  
Kearney and Peebles 1942.



P-12. View of Sheep Mountains across Arrow Canyon Valley showing yucca, cholla cactus (Opuntia Sp.), creosote bush and other perennial plants



P-13. Barrel cactus (Echinocactus sp.), creosote bush (Larrea sp.) in proposed IPP right-of-way in Arrow Canyon Valley

The previous comments fit together to provide a general picture of Moapa feelings regarding their traditional plants and Euroamerican society. The plants are perceived as belonging to Indian people. Whites, on the other hand, take the plants and use them for personal food and for commercial profit (see Chapter IV:216). Government regulatory agencies who attempt to manage Indian resources located on state or federal lands have developed policies that restrict Indian access to these foods. Indians are simply considered as "American citizens" and are consequently permitted only an "equal share" in the resource. Strong feelings have been generated in the Indian community by such policies.

#### EXPRESSED CONCERNS FOR ANIMALS

Mountain Sheep. Without question the most important animal of current concern in the Moapa Indian community is the Mountain (Bighorn) Sheep. They recognize two varieties. One is small and brown and resides in the Arrow Canyon Range and the Meadow Valley Mountains. There is a special origin story that explains the smaller sheep. It is reputed to have a special taste that is not as highly valued as its larger relatives who live across the Arrow Canyon Valley.

The larger variety of Mountain Sheep in the area live on the Sheep Range. These sheep are protected today by the Desert National Wildlife Range which incorporates the entire Sheep Range and the Las Vegas Range. The hunting of these sheep constituted a highly significant role component of Moapits men. The significance of the sheep as a component of the diet of Paranayi predecessors is reflected in the petroglyphs found throughout Paranayi territory. Large panels of rock covered with sheep petroglyphs exist in the Meadow Valley Wash, in Arrow Canyon, and are reputed to exist in various locations in the Sheep Range. The hunting of sheep was an activity of importance as late as the 1930s according to Moapa elders. It is clear that the sheep constituted an important component in the religion of the Moapits.

Access to the Mountain Sheep continued until at least the 1930s according to Moapa elders. After this time government intervention, designed to protect the Mountain Sheep from hunters (white and Indian alike), severely reduced and finally eliminated hunting of the Mountain Sheep. An elder we talked with about this matter felt that the government is keeping the Moapa people from both a food source, an activity that was part of being a Indian man, and a component of their religious life.

Desert Tortoise. Like their Paiute neighbors to the south, the Moapits value the tortoise as both a traditional food and an animal with a right to be left unmolested. Highway traffic tends to be the worst enemy of the tortoise but

off-road vehicle (ORV) traffic also kills them. Thus, any road that would be constructed into areas where tortoises live would decrease their numbers. Tortoises of a larger variety than elsewhere in Paranayi territory are reputed to live in the Arrow Canyon Valley.

#### EXPRESSED CONCERNS OVER POWER LINES

Proposal to Build More HVTL. The IPP-N survey question, "How do you feel about the proposal to build more transmission lines through your traditional lands?" elicited the following negative comments:

"Not very good."

"Enough is enough"

"If it still was Indian land, there wouldn't be any lines there."

"I don't like it."

Seeing Large Power Lines. In reply to the IPP-N survey question, "What are your feelings when you see large power lines and their towers crossing the desert valleys or mountains?" 75% (N=3) of the respondents said they didn't like them. One person (25%) responded positively, saying, "It is a need in everyday living for all people." The negative comments were:

"It hurt my feelings."

"It destroys plants and vegetation."

"I feel disgust! White man calls this progress. Our Indian Ancesters didn't need electricity to survive, they needed their Mother Earth. She is slowly dying from white man's so-called Progress."

#### MITIGATION

Members of the Moapa tribe seemed very reluctant to answer questions concerning their feelings about their sacred sites. Only 4% (N=4) of the 89 IPP-Nevada surveys mailed to them were returned. However, the Moapits who did respond expressed the same types of concerns as did the Moapa elders who were directly interviewed by Stoffle and Bullettts.

Two Moapa elders were asked what should be done if the power line construction dug up artifacts or burials that once

belonged to Indian people. The male answered:

. . . like she (the other elder) said, she'd like to see those Indian bones. If they find Indian bones or pottery-- get that back--that's all. That's the only thing.

When asked what they felt about the power line digging up the land itself, the elders commented that

Digging up the land used to be against the Indian way. It used to be but we're not old--we're young people, now. We got to go with this younger generation. That's the way it goes. That's how I understand it. I don't have anything against things for the children. But--like I say--I'm concerned about the potteries and stuff and would like to get them back--'cause there's a lot of beautiful pottery's been taken out of this area."

It should be noted that one of the Moapa elders believes that there is an agreement between the archaeologists who conducted the survey for the MX environmental studies and the Moapa Indian Tribe to have the artifacts collected in the Arrow Canyon Valley returned to the tribe. The elder knew of no stipulations placed on that agreement. The archaeologists were to have the artifacts only until they had finished their study for the MX project. Although the MX report had been released the artifacts had not been returned and the elder was wondering when the artifacts would be returned to the Moapa Tribe. The elder believed that such an arrangement between the Moapa Tribe and IPP would be appropriate.

Mitigation of Indian Tools and Habitation Sites. When members of the Moapa tribe were asked the IPP-N survey question, "If Indian tools or living sites are uncovered by power line construction, what should be done with them? 50% of them (N=2) said that the artifacts should be given back to the Indian people; 25% (N=1) said, "Leave them alone." There was one no response.

Mitigation of Indian Burial Sites. In response to the 1982 IPP-N survey question, "If the burial sites of Indian people are uncovered by construction, what should be done with them?" 75% (N=3) said they should be reburied and left alone. One of those who made this comment added that they should not be "taken to a museum and put on display." The last respondent, 25% (N=1), commented that disturbing burials is the problem of the utility company because "when you disturb the rest of the dead, you have to suffer the consequences of the uncovering."

Listening to Indian Opinion. In response to the 1982 IPP-N survey question, "Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to

by the utility companies?" the feelings of the majority (75%, N=3) of the Moapits can best be summed up in the following quotation:

"Do you really want an honest answer? No. Even if majority ruled and all Indians said, "No," you'll still go ahead! Remember, this is called progress by the white people. After all, who are we to try and fight the white man? We lost a long time ago."

The only other respondent, commented optimistically: "Probably not, but in this day and age a lot of things can be done that Indian people never even thought of."

## PANACA AND CEDAR CITY PAIUTES

### BACKGROUND

As outlined in the ethnohistorical chapter, Euroamerican colonization of Meadow Valley was essentially agricultural. Consequently, it ousted Southern Paiutes from their primary food production fields along the stream. Deprived of their food production land and water base, the Native Americans who traditionally exploited the area had little choice but to become wage workers. As the Euroamerican town of Panaca formed and grew, the satellite Southern Paiute labor camp or camps came to be considered a Panaca Band (Kelly 1934:554). As Euroamerican farmers striving for self-sufficiency and profit hired less and less Native American labor, Southern Paiutes who once had lived rather well in Meadow Valley tended to migrate generally eastward. They found refuge and comparatively abundant natural resources for a time with another enclave at and near Indian Peak. In the course of time, however, descendants of the Meadow Valley Wash people ended up living for the most part with other remnants of Southern Paiute groups in the Cedar City satellite settlement. Consequently, the study team consulted descendants of Southern Paiutes who once exploited the upper Meadow Valley Wash area and who function today as members of the Cedar City enclave.

There is at least one persisting settlement of Southern Paiutes in Meadow Valley Wash. As indicated in the ethnohistorical chapter, Caliente is a railroad town that began about 1902 as an end-of-track point. Because it provides employment, a few Southern Paiutes whose ancestors actually did not originally live there migrated to Caliente along with other workers. Consequently, the present study incorporates the concerns over Southern Paiute territory voiced by contemporary residents of Caliente.

Little is known of the lives of Panaca Indians during the post colonization period. Occasionally, however, a clear fact comes to light: the study team found one in the Pioche Historic Society Museum. In a photographic display were two pictures taken in 1898 at Delamar mining town (see Chapter IV:213-214). The setting is a hill side near town with an Indian home in the background. The scene is an outdoor operating table where an unnamed Indian miner is having a portion of his leg amputated. Present at the operation are two Native Americans, known as "Indian Keno" and "Indian Pete." Indian Keno is shown standing a few feet away from the operation looking sternly at the goings on. Indian Pete is shown assisting the operation by kneeling next to the patient along with the two white doctors. From the activity in the two photographs one might assume that Indian Pete was helping with the medical aspects of the operation while Indian Keno was serving in some official capacity. Dan Bulletts knew both men decades later and noted that Keno was a respected Paiute leader and Pete was considered an Indian doctor. These two photographs, then, document the persistence of Native American political and medical specialists during the labor camp period.

#### METHODOLOGY

Southern Paiute residents of the Panaca area and their descendents are presently registered with the Paiute Tribe of Utah and with the Moapa Tribe. Permission to interview these people was obtained through Chairman Benioh of the Paiute Tribe of Utah in Cedar City, Utah. The OTCR, the chairman, and concerned tribal members supplied the researchers with the names of Paiute people who should be interviewed.

In-depth interviews concerning the northern section of the IPP right-of-way, the Panaca area of Nevada, took place January 6th and 8th, 1982 at Cedar City, Utah, and January 7th at Caliente, Nevada.

All the people interviewed had either lived in or near the study area as children or had traveled there for extended periods as adults. An in-depth interview was conducted with an elderly woman who was born in the study area and who lived there as a child and young woman. This woman, who identified herself as half 'Paiute and half Shoshone, is noted for her knowledge of the old ways. Her daughter, also present at this interview, is interested in the old ways and has accompanied her mother on plant gathering expeditions. Other in-depth interviews were conducted (1) with an elderly woman who was born in Caliente and who lived there as a child, (2) with a woman who has lived all her life in Caliente and (3) with a woman who spent 20 years in Caliente. This latter woman accompanied the study team from Cedar City to Caliente, paralleling the proposed right-of-way, commenting on the Indian



resources in the area and on some of her concerns. Two Paiute men living in Caliente were also suggested as important people who could talk about the old ways. Unfortunately, neither could be contacted on the day trip to Caliente.

During the 1982 IPP-Nevada study a survey instrument was mailed to 82 Cedar City and Indian Peak people. The survey asked them to indicate their degree of concern for cultural items and traditional Indian places. Ten (12.9%) of the 82 members of the Cedar City and Indian Peak people returned their surveys. Some of their demographic characteristics are: the average age is 31.9 years, the majority (88%) live off the reservation, and the average time they have lived at their current residence is 15.7 years.

#### GENERAL CONCERNS FOR CULTURAL RESOURCES

The general concern expressed by the Paiute people interviewed was that all Paiute land is sacred and that power lines in general disturb the sacred nature of the land. More specifically, the Paiutes interviewed were concerned about the effects of the proposed line on Native American burials and living sites which are scattered all over the area. As one informant stated ". . . way before the white people settled here there was Indians all up through Eagle Valley and all down through this Meadow Valley Wash. Right in Panaca, too, and Pioche." The same informant, speaking of graves, later said, "Well, you know you could come on them anywhere, because years ago, they just buried them anywhere they died." In addition, to burials and living sites, the Paiutes were concerned with the effects of the transmission lines and the construction on plants, particularly on pinenuts found on pinyon trees, berries, and Indian or Brigham tea, although concern was also expressed on the effect of the lines on other traditional food plants: wild grasses, roots, and greens.

In the IPP-Nevada survey, Cedar City and Indian Peaks people were asked to record the intensity of their concern for certain types of cultural items. TABLE 25 presents the average intensity of concerns they expressed. Strong concern was expressed for burial sites (3.0), springs (3.0), and religious areas (3.0). Such concerns are similar to the responses of Moapa, Las Vegas, and Pahrump peoples. Again the strong concern for springs as cultural sites is revealed in the survey responses.

TABLE 25: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY  
OF CEDAR CITY AND INDIAN PEAKS CONCERN (1982  
IPP-NEVADA).\*

CULTURAL ITEMS	AVERAGE INTENSITY OF CONCERN N=10
Burial Sites	3.00
Springs	3.00
Religious Area	3.00
Medicine	2.90
Food Plants	2.90
Birds	2.90
Small Ground Animals	2.90
Large Ground Animals	2.90
Rock Art	2.90
Trails-Shrines	2.80
Basketry	2.70
Clay-Rock Mines	2.60

\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

## EXPRESSED CONCERNS COMBINED BY LOCALE

This section discusses the concerns people expressed for specific places. The areas discussed begin at the northeast end of the proposed IPP right-of-way on the Nevada-Utah border and proceed west and then southwest to the confluence of the Delamar Valley and the Arrow Canyon Valley. These areas include the Panaca Summit area, Eagle Valley, the canyon lands of Pioche, the Pioche foothill area, and finally Delamar Valley. The Native American people contacted for this area were primarily descendants of the Panaca band of Paiutes and claimed not to know a lot about Native American resources in the adjacent territory to the west of Delamar Valley. The few statements that were given about the Pahrnagat people or territory referred either to travel that took place through their territory, e.g., travel to Moapa by way of the Delamar Valley, or to an individual's Pahrnagat relatives who traveled to or moved to the Panaca region. That the descendants of the Panaca Paiute people should know little about the Pahrnagat region is not surprising. Concern as well as knowledge appears to fade at borders. This, of course, is relative rather than complete since intermarriage has always taken place and people have always traveled to neighboring territory for economic and social reasons. Another reason that present day Paiutes would know little about the Pahrnagat region is that there have been very few Native Americans living there since the turn of the century.

Expressed Concerns For Places. TABLE 26 shows that Cedar City and Indian Peak people have the highest degree of concern for Cathedral Gorge State Park, Southern Pahrnagat Valley, and Whiskey Spring. All three scored 2.7 on a scale of 1 to 3. Delamar Dry Lake and Arrow Canyon Range with a score of 2.6 ranked next. Cedar City and Indian Peak respondents held the lowest degree of concern for McCullough Range and Eldorado Valley (2.3). In general, these average concern scores reflect a pattern in which places closest to their current Indian lands receive the greatest degrees of concern. The only exceptions to this general pattern are Whiskey Spring (2.7), Sheep Mountain (2.5), and Jean Lake (2.63). These three places are all located in the southern part of Nevada, a considerable distance from Cedar City and Indian Peak.

Panaca Summit Area. The Panaca Summit area is important because of the large number of pinyon (pinus monophylla) pines that provide large pinenuts,. These pinenuts are larger and more pasty than Pinus edulis found in Utah and Arizona. These large ones are preferred by many Native Americans who travel large distances to pick them. From the testimony given it appears that this area has been important to Native Americans from the pre-contact era up to the present time. One cause of

TABLE 26: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF CEDAR CITY AND INDIAN PEAK CONCERN (1982 IPP-Nevada Survey).\*

INDIAN PLACES	AVERAGE INTENSITY OF CONCERN N=10
Cathedral Gorge State Park	2.7
Southern Pahrnagat Valley	2.7
Whiskey Spring	2.7
Condor Canyon	2.6
Bennet Pass	2.6
Black Canyon Range	2.6
The Bluffs	2.6
Burnt Springs Range	2.6
Delamar Mountains	2.6
Historic Town of Delamar	2.6
Delamar Lake	2.6
Arrow Canyon Range	2.6
Hidden Valley (by Arrow Canyon Range)	2.6
Clark Mountains	2.6
Kane Springs Wash	2.5
Dry Lake Valley	2.5
Dry Lake Range	2.5
Sunrise Mountains	2.5
Frenchman Mountains	2.5
Rainbow Gardens	2.5
Hidden Valley (east of Jean Lake)	2.5

TABLE 26: continued.

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Jean Lake	2.5
Sheep Mountain (south of Jean Lake)	2.5
Ivanpah Valley	2.5
Roach Lake	2.5
Ivanpah Lake	2.5
Black Hill (south of Henderson)	2.4
McCullough Range	2.3
Eldorado Valley	2.3

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\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

this importance was the area's great variety of edible plants. A list of plants found in the IPP right-of-way as it passes from Meadow Valley Wash to the state line in the Panaca Summit area is presented in TABLE 27 (see PLATES 14 and 15).

According to the testimony of one respondent, "I know there are campgrounds there. You can just walk around and you can see where they camped and where they went to get pinenuts." Hunting was also an important activity in the hills, especially deer and rabbit hunting. This activity has also continued into the present. In the past, areas that were extensively used by Paiutes were also where they buried their dead. A Paiute, discussing the proposed power line, commented,

"All over that area there are people buried and probably in the mountains where they picked pinenuts. Well, right in that area somewhere in those mountains, my grandfather was buried, too. He was runned over by a wagon and they buried him right there."

Eagle Valley. Virtually everyone of the Paiutes interviewed about the Panaca section of the right-of-way commented on the importance of Eagle Valley. One elderly woman had lived there and the others had all heard older people mentioning it. "Eagle Valley" was difficult to locate precisely on the map. However, it lies between the border (Utah/Nevada) and Pioche and just north of the proposed right-of-way. Some concern was expressed that the transmission line might cross the southern edge of it. Eagle Valley was occupied by Paiutes during the pre-contact time and into this century. The primary concerns pertaining to the valley referred to Native American burials and living sites both pre-contact and historic.

Canyon land. The broken canyon land located immediately east of Pioche was an area much used by Paiutes according to one informant. She said that people camped there when they were hunting or gathering. She could not place the camps on the map but said to look out for them.

Pioche hills. Paiute people and Shoshones used to camp in the Pioche hills. Many of the people spoke both Paiute and Shoshone. The oldest person who was interviewed is herself half Paiute and half Shoshone and grew up speaking both languages. She lived in the Pioche hills part of the time. She also spoke of gathering many different foods: pinenuts, u'upi, a red berry (Lycium sp.), i'is, another berry on a sumac bush and many wild grasses.

Delamar Valley. Many people used to live at the south end of the valley. The elderly woman mentioned in the preceding section spoke of hearing about people traveling down to Moapa and visiting the people living at the south end of the valley just south of Delamar Dry Lake (see PLATES 16 and 17). She

TABLE 27: PLANT SPECIMENS COLLECTED OF CONCERN TO SOUTHERN PAIUTES IN THE MEADOW VALLEY-PANACA SUMMIT REGION OF NEVADA

BOTANICAL NAME	NUMIC NAME	COMMON NAME	USE
1. <u>Androstephium</u> <u>breviflorum</u>			
2. <u>Artemesia</u> sp. <u>tridentata</u>	sangwavi	sagebrush	
3. <u>Astragalus</u> sp. <u>purshii</u>		milkvetch	
4. <u>Asteraceae</u> sp.		aster	
5. <u>Calochortus</u> sp.	sixo'o	sego lily mariposa lily	food
6. <u>Caulanthus</u> <u>crassicaulis</u>			squaw-cabbage
7. <u>Chrysothamnus</u> <u>nauseosus</u>		sikump	rabbitbrush
8. <u>Cowania</u> <u>mexicana</u>	anapə	cliffrose "buchbrush"	medicine fiber
9. <u>Cryptanta</u> sp.			
10. <u>Cymopterus</u> <u>multinervatus</u>	nampip	water parsnip	food
11. <u>Descurainia</u> <u>pinnata</u>	akə	tansymustard	food
12. <u>Ephedra</u> <u>nevadensis</u>	tutupi tutuupi utuupi	Mormon tea jointfir	drink medicine
13. <u>Distichlis</u> sp.		saltgrass	
14. <u>Haplopappus</u> <u>acaulis</u>	pau'p		
15. <u>Juniperus</u> <u>osteosperma</u>	wa'apə (branches) wa'apəmpi (berries)	juniper/cedar	food berries

TABLE 27: continued.

16.	<u>Linum lewisii</u>	flax
17.	<u>Lomatium sp.</u>	biscuitroot Indianroot
18.	<u>Phlox</u> <u>covillei</u> <u>hoodii</u>	phlox
19.	<u>Physaria chambersii</u>	
20.	<u>Pinus ponderosa</u>	ponderosa pine
21.	<u>Purshia sp.</u>	bitterbrush
22.	<u>Streptanthella</u> <u>longirostris</u>	
23.	<u>Streptanthus cordatus</u>	
24.	<u>Townsendia scapigera</u>	
25.	<u>Quercus sp.</u>	oak

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Sources: Boyd field notes; Bunte and Stoffle field notes; Kearney and Peebles 1942.

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commented that these people, Pahranaagat Paiutes, were eventually chased out of the area and that no Paiutes have lived there for a long time.

#### EXPRESSED CONCERNS OVER POWER LINES

Proposal to Build More HVTL. In an overwhelming response to the IPP-Nevada survey question, "How do you feel about the proposal to build more transmission lines through your traditional lands?" 80% (N=8) of the Cedar City-Indian Peak Paiutes replied with negative comments which included the following statements:

"I don't like it a bit."

"Forbidden."

"Go ahead and do it, you're gonna do it anyway."

"As an American Indian, I place a lot of value on our traditional lands which I feel should be kept clear of any kind of construction. Let it remain a place of undisturbed beauty."

One person responded in a somewhat positive way with the comment:

"If it was to be used for the people in our area, I'm all for it, but as it is now, the power is going to be used in California."

One person said that he had no feelings either way.

Seeing Large Power Lines. When asked the 1982 IPP-Nevada survey question, "What are your feelings when you see large power lines and their towers crossing the desert valleys and mountains?" 40% (N=4) of the respondents commented that the whiteman is invading traditional lands with the power lines. Three other respondents (30%) said that power lines look ugly. One member of the Cedar City Band replied: "They have disturbed the Mother Earth. The Mother Earth has been desecrated enough." Only one person did not respond to the question. Another person felt no concern.

#### MITIGATION

During in-depth interviews there were a series of mitigation recommendations. Although everyone agreed that burials should not be disturbed and that remains should not be sent to museums, the individuals interviewed did not state what



P-14. Pinyon, juniper and sagebrush in Panaca Summit area.



P-15. Juniper and sagebrush in Panaca Summit area.

should be done with the remains. This behavior reflects an unwillingness to speak for the group. Traditionally, decisions of this nature were decided by consensus at group meetings. The following mitigations were recommended as part of the survey responses.

Mitigation of Tools and Habitation Sites. In response to the 1982 IPP-Nevada survey question, "If Indian tools or living sites are uncovered by power line construction, what should be done with them?" the feeling of 60% (N=6) of the Cedar City-Indian Peak respondents are best represented by the following quotation:

They should be buried and left alone. And that doesn't mean to go dogging everything up. There's been a lot of Indian bones, pottery, etc. in museums.

The remaining 40% (N=4) of the responses varied in context, but the general tone was that the Indians should be the ones to decide on the disposition of tools and habitation sites. For example, one response was, "Give [them] to the Indian tribe, they will decide what to do with the items."

Mitigation of Indian Burial Sites. The answers of 80% (N=8) of those who responded to the 1982 IPP-Nevada survey question, "If the burial site of Indian peoples are uncovered by power line construction, what should be done with them?" said that they should be reburied in the same area and left alone. The remaining 20% (N=2) said that either they should be buried in a place out of the way of power line construction, or that the decision should be left to the tribe.

Listening to Indian Opinion. In response to the IPP-Nevada survey question, "Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?" 60% (N=6) of those surveyed felt that Indian people are never listened to, and one of these respondents added, "they need to hear the Indian's point of view." The remaining 40% (N=4) were more positive. One person thought their opinions would be listened to, but doubted if any change would occur. One replied, "Yes."

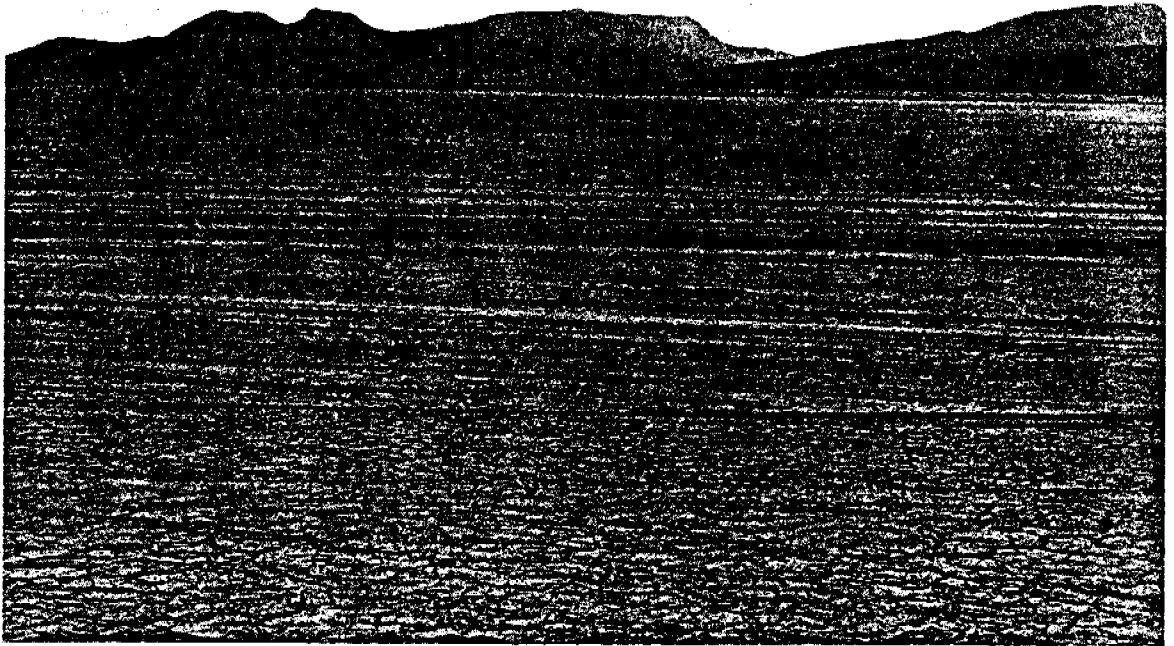
## CONFEDERATED TRIBES OF THE GOSHUTE RESERVATION

### BACKGROUND

Before Euroamericans colonized the Great Basin, the Southern Paiutes carried on amicable relations with their Shoshone neighbors to the northwest. Within the area of most concern to this study, the nearest Shoshones were those on the northern and western borders of the Southern Paiute sub-tribe



P-16. Petroglyphs on rock outcrop beside Delamar Dry Lake, just west of proposed IPP right-of-way. Figure is 5'2" tall



P-17. Sun-cracked soil in bed of Delamar Dry Lake looking west

that exploited the desert northwest of the Moapa River through and beyond Pahrnagat Valley. Their relations with their Shoshone neighbors "were cordial" (Kelly 1934:554).

Oral history among contemporary Southern Paiutes identifies the Goshute Reservation at the western border of Tooele County, Utah, and the eastern border of Nevada as the present home of descendants of those adjacent Shoshones. That area was not reserved for Goshute use until 23 March 1914 when President William Howard Taft set it aside by executive order (Allen and Warner 1971:177). The experience of the Goshute people during Euroamerican colonization differed from that of the Southern Paiutes in detail as well as chronology. The transcontinental Pony Express and later stage mail route via Salt Lake City disrupted Goshute environmental relations in much the same way that initiation of traffic over the Old Spanish Trail disrupted Southern Paiute man-land relationships. The Pony Express line intruded upon Goshute territory several decades later than the Old Spanish Trail traders intruded upon Southern Paiute oases. The transcontinental travel route, and the thrust of Mormon settlement and early urbanization at Salt Lake City, Provo, Ogden, and elsewhere in Tooele County re-oriented the Goshute post-colonization dependency economy decisively. Goshutes and such Shoshones as joined them did not look southward after the 1860s toward the area the IPP proposed to traverse with an electrical power transmission line.

#### METHODOLOGY

Research study team members Stoffle, Bulletts, and Stewart visited the Confederated Tribes of the Goshute Indian reservation on January 6, 1982. Initial arrangements for the visit were made through the Goshute OTCR. Ms. Cynthia Keoke, but she was unable to attend the meetings while the research team was on the reservation. In her place her father, Mr. Robert Steele, assisted the study team.

Initial discussions were with tribal officers at the Council Office. The business manager suggested that the study team members meet with the Senior Citizens Group at their noon luncheon meeting the following day. During the rest of the day on January 6th, however, Stewart visited with a series of Goshute elders. Many of these people he had known when working on the reservation in 1937.

On Thursday, January 7th, study team members met with six Goshute elders and two tribal leaders. At that meeting the general issue of Native American Impact Assessments was discussed along with the laws that have brought such studies in to existence. Much of the time was spent on this issue. One tribal leader was surprised to hear that such a set of laws

existed and was even more surprised to hear that anyone paid attention to them. Elders expressed concern that the IPP generation station had not been discussed with the Goshute people inasmuch as it falls well within lands recently occupied by them. The meeting lasted for two hours.

For an hour after the meeting, study team members continued to discuss the issues with a senior tribal leader. Also, brief discussion with the tribal chairman was possible as the study team was leaving the reservation. At that time it was agreed that Chairman Dan Murphy would attend the next OTCR orientation session which was to be held in Las Vegas on Saturday, January 9th. He attended that day long meeting and discussed the IPP project with study group members and ACT representatives.

Four (9%) of the 46 members of the Goshute Indian Tribe who were sent the 1982 IPP survey returned it. Respondents shared several characteristics. All four listed Ibapah, Utah as their place of residence and said their parents had lived there. Although none of these respondents gave the exact year of their birth, two were retired. Another respondent, who did not know his birth date, said that he was "old." One person, a housewife, made no response to the question.

#### GENERAL CONCERNS FOR CULTURAL RESOURCES

When asked to express the intensity of their concern for Indian cultural resources, the Goshutes made the strongest response possible on a scale of 1 to 3. They gave a value of 3.0 to every cultural item listed in the IPP-Nevada survey (see TABLE 28).

#### EXPRESSED CONCERNS FOR PLACES

The responses to the IPP-N survey indicate that the Goshute respondents feel strongest about portions of the IPP right-of-way that are near to the Goshute reservation. Cathedral Gorge State Park and Condor Canyon received average intensity scores of 2.25 while all other places received a 2.0 score (see TABLE 29). These scores are lower than those from the Paiute groups.

#### EXPRESSED CONCERNS OVER POWER LINES

Proposal To Build More HVTLS. A strong negative response was made by 100% (N=4) of the Goshutes who replied to the 1982 IPP-Nevada survey question, "How do you feel about the proposal

TABLE 28: NATIVE AMERICAN CULTURAL ITEMS, RANKED BY INTENSITY OF GOSHUTE CONCERN (1982 IPP-NEVADA SURVEY).\*

CULTURAL ITEMS	AVERAGE INTENSITY OF CONCERN N=4
Basket Plants	3.00
Medicine Plants	3.00
Food Plants	3.00
Rock Carvings-Paintings	3.00
Clay-Rock Mines	3.00
Religious Area	3.00
Burial Sites	3.00
Small Ground Animals	3.00
Large Ground Animals	3.00
Birds	3.00
Trails-Shrines	3.00
Springs	3.00

\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

TABLE 29: ENGLISH NAMES FOR INDIAN PLACES RANKED BY INTENSITY OF GOSHUTE CONCERN (1982 IPP-Nevada Survey).\*

INDIAN PLACES	AVERAGE INTENSITY OF CONCERN N=4
Cathedral Gorge State Park	2.25
Condor Canyon	2.25
Bennett Pass	2.00
Black Canyon Range	2.00
The Bluffs	2.00
Burnt Springs Range	2.00
Arrow Canyon Range	2.00
Hidden Valley (by Arrow Canyon Range)	2.00
Delamar Mountains	2.00
Delamar Dry Lake	2.00
Historic Town of Delamar	2.00
Southern Pahrangat Valley	2.00
Kane Springs Wash	2.00
Dry Lake Valley	2.00
Dry Lake Range	2.00
Sunrise Mountains	2.00
Frenchman Mountains	2.00
Rainbow Gardens	2.00
Black Hill (south of Henderson)	2.00
Clark Mountains	2.00
Whiskey Spring	2.00



TABLE 29: continued.

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Roach Lake	2.00
Jean Lake	2.00
Hidden Valley(east of Jean Lake)	2.00
Sheep Mountain (south of Jean Lake)	2.00
Eldorado Valley	2.00
McCullough Range	2.00
Ivanpah Lake	2.00
Ivanpah Valley	2.00

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\* "no concern" responses have a 1 value, "some concern" responses have a 2 value, and "much concern" responses have a 3 value.

to build more transmission lines through your traditional lands?" Only one respondent had no response to this question. The three negative comments were:

"I don't like it."

"I don't like no more transmission lines to be build on the traditional lands."

"I don't think it a very good thing because a long time ago we never had anything as a transmission lines and I think it should be left as it is because of our land."

Seeing Large Power Lines. In response to the IPP-Nevada question, "What are your feelings when you see large power lines and their towers crossing the desert valleys or mountains?" 100% (N=4) of the Goshutes had strong negative feelings. The following represents these evaluations:

"It's not a very good feeling seeing your desert and mountains with lines crossing the desert, mountains."

#### MITIGATION

The Goshute people we interviewed were virtually overwhelmed by the prospect of having someone arrive in the middle of winter (during a 23 degree below zero period) to ask questions about cultural resources that had been left one or more generations ago. Setting the factor of cold aside, it was clear that no people including the tribal leaders had ever participated in such a study. Not only had they not been asked about cultural resources lying hundreds of miles to the south but recent development projects located on the southern boundary of the reservation had "bulldozed a well known Indian graveyard without so much as a check with the Indian."

These few Goshute comments of the IPP right-of-way in Nevada should neither be interpreted to mean that they either do not know nor are not concerned about their own cultural resources. Quite the contrary is true. Strongly expressed concerns were voiced for an area immediately south of the reservation, for another major burial area south of Highway 6 in the Sacramento Pass area, for an area near the now dry Sevier Lake, and for the area around Delta where the IPP generating facility is currently under construction.

Mitigation of Indian Tools and Habitation Sites. Of the Goshute respondents asked the 1982 IPP-Nevada question, "If Indian tools or living sites are uncovered by power line construction, what should be done with them?" 50% (N=2) felt that the sites should be reburied and construction should be

rerouted. The other 50% (N=2) said that the artifacts should be turned over to the Indian people.

Mitigation of Indian Burial Sites. All four members of the Goshute tribe who responded to the 1982 IPP-Nevada survey question, "If the burial sites of Indian people are uncovered by power line construction, what should be done with them?" said that they should be reburied and left alone. The comment of one of the four respondents summarized their feelings, "They should be covered back up so that they may rest in peace."

Listening to Indian Opinion. The response of 75% (N=3) of the Goshutes who answered the IPP-Nevada survey question, "Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?" was negative. The only other respondent (25%) was slightly hopeful. He said, "Sometimes, but I hope this time we Indian peoples' opinions are heard." The negative comments were:

"No, because they are not many people that their voices are never heard."

"Opinions of Indian peoples don't have a very strong word because other people are not willing to listen to what we say."

A negative comment by one of the respondents was slightly qualified:

"Very once a while they are heard. Indian people was never heard."

## CHAPTER VI. MITIGATION RECOMMENDATIONS

This chapter contains a synthesis of documented and expressed Native American concerns with study team recommended impact mitigations. Here the term "impact mitigation" is being used, following Leistritz and Murdock (1981:17), to mean efforts to minimize those impacts on pre-construction conditions and resources which are viewed as undesirable and to enhance those changes which are considered beneficial. This chapter also discusses Native American concerns according to general geographic location and by specific sites.

At each location, there is a discussion of site specific mitigation as recommended by the various tribal councils and/or tribal members and the study team. The chapter does not contain a discussion of the non-site specific mitigation recommendations which have been communicated by these Indian peoples to the study team. These recommendations involve decisions that are not specifically related to the protection of cultural resources. They are listed in Chapter V by tribe.

### GENERAL MITIGATION RECOMMENDATIONS

Some recommendations regarding the disposition and protection of Native American cultural resources are so consistent from tribe to tribe that they can be discussed for the entire Nevada IPP right-of-way. These recommendations have to do with (1) the presence of a Native American Observer during certain groundbreaking activity; (2) the disposition of burials and artifact assemblages found during construction and/or archaeology excavation of sites, and (3) the disposition of plants of special value to Native Americans.

#### NATIVE AMERICAN OBSERVER

The tribes have expressed the concern that they have a representative present during certain groundbreaking activities at areas considered sensitive and associated with the IPP. This representative is called here a Native American Observer or NAO. These activities may include tower pad construction, grading of the right-of-way access road, and archaeological excavation of Indian habitation-burial sites. The concerns are limited to traditional tribal areas. Because no tribe has argued for a traditional boundary that is different than those contained in this report, these boundaries will be used to demonstrate the limits of a particular tribe's NAO involvement.

It is recommended that there be a preconstruction meeting held with NAO's present before IPP right-of-way groundbreaking activities occur within sensitive areas. This meeting minimally should involve (1) an official representative of the Pahrump, Las Vegas, Moapa, and Paiute Tribe of Utah communities, (2) a BLM representative, and (3) ACT personnel, probably an archaeologist and an ethnographer. Depending on the meeting's agenda, a representative of the IPP and candidates for the NAO positions may be included at this time. The meeting's agenda should minimally include: (1) the selection of NAOs; (2) training of NAOs; (3) NAO's financial reimbursement; (4) a discussion of the NAO's rights and responsibilities; and (5) when and where the NAO's should be on the site of groundbreaking activities. In addition, the disposition of artifacts-burials found during groundbreaking may be discussed at this time.

This meeting will serve to clarify the tribes' expectation(s) of the NAOs and provide an opportunity to communicate the financial and legal constraints the BLM and IPP have regarding the IPP Intermountain-Adelanto Bipole I transmission line and the lands on which it may be built. Negotiated points should be agreed to in writing.

NAO training-orientation should occur once general guidelines have been defined. The NAOs should be (1) made aware of the various agreements made during the preconstruction meeting, (2) given an understanding of the groundbreaking activities they are expected to observe, and (3) given a preliminary coordination plan and a preliminary schedule of the times and extent their services will be needed.

#### MITIGATION OF FORMERLY UNKNOWN CULTURAL RESOURCES

It is understood that no set of archaeological and ethnographic studies can reveal the existence and location of every Native American sacred resource located in the IPP right-of-way, although this is the goal of these studies. When a Native American sacred resource, such as a burial or extensive artifact assemblage, is found during additional surveying, groundbreaking, or construction, there should be an agreed upon (1) procedure for notifying potentially concerned Native American group(s) and (2) response time within which the Native American group(s) should respond with mitigation recommendations. The previous NAO discussions and training should greatly facilitate the speed and acceptability by which these formerly unknown cultural resources can be mitigated.

#### MITIGATION OF NATIVE AMERICAN PLANTS

Throughout this report the great importance of plants to

these Indian peoples has been expressed (see TABLE 30). Unfortunately, plants are among the most difficult resources to be successfully mitigated. Some plants such as Mentzelia may actually be encouraged by groundbreaking activity. Other plants such as the barrel cactus clearly could be destroyed by construction. Federal legal protection of plants is limited to those defined as "rare" or "endangered." Indian concerns recorded in this report are for the plants themselves and the modifications that will occur in the overall ecology of the Holy Land as the plants are removed. In this case the federal law almost always provides too little protection for too few species of plants.

During construction of the IPP transmission line, adverse impacts to plants should be minimized. Those plants specifically mentioned by Indian people during this ethnographic study are discussed below in the site-specific section. A second mitigation recommendation is for IPP or BLM personnel to discuss with the appropriate tribal officials the physical possibility and economic feasibility of transplanting a portion of certain plant species which will be destroyed to tribally controlled lands where the tribe can oversee their protection and use. Finally, if the plants that are to be destroyed have commercial value--as has been suggested by a number of tribal elders--then IPP and/or the BLM should discuss with the appropriate tribe regarding the harvesting or commercial sale rights.

The following portion of this chapter discusses site specific mitigation. Here, actual locations along the IPP right-of-way are discussed. The locations are referenced according to USGS Topographic Quadrangles. Each tribal OTCR has received a set of these Topographic Quadrangles. Each tribal chairman has received a set of IPP project maps based on such quads. These USGS quads are generally available to the public in libraries and through state and federal government offices, such as the Bureau of Land Management.

The IPP right-of-way is divided for the purpose of making specific mitigation recommendations into "sections" and section portions called "areas." These are described in terms of (1) the expressed concerns of Native American peoples, (2) the archaeological record as established by the IPP Nevada archaeologists, (3) historic records, and (4) the extent to which the area and its cultural resources have already been disrupted. Based on these criteria, a level of "cultural significance" is assigned to each area. Three broad categories of significance are used: high, moderate, and low. A few areas are judged to fall somewhere between two of three of these categories. The level of cultural significance is combined with a consideration of the types of cultural resources found in an area in order to determine mitigation recommendations.

## SITE-SPECIFIC MITIGATION

### PANACA SUMMIT SECTION

The Panaca Summit Section begins where the IPP right-of-way crosses the Utah-Nevada state border (Prohibition Flat, NV. 7.5, T. 1 S., R. 71 E., Sections 9 and 16). It includes IPP right-of-way marked on the following USGS Nevada Quads: Prohibition Flat, Panaca Summit, Condor Canyon, Rose Valley, and Pioche. The section ends where the IPP right-of-way crosses state highway 93 from Pioche to Panaca (Pioche, NV. 7.5', T. 1 S., R. 68 E., section 6).

This section is of importance to a number of Paiutes living largely in the Cedar City area, but also living in Caliente.

Hilly Border Area. This area begins at the Utah-Nevada state border where the IPP right-of-way crosses the state line and extends to the western border of mountains just north of Gleason Canyon (Panaca Summit, NV. 7.5', T. 1 S., R. 70 E.). The mountains and hilly slopes are covered with thick stands of pinyon and juniper. The area was occupied by Native Americans in very recent times and contains a number of sites of importance. Although the study team has recorded expressed concerns about the area, the sites themselves cannot all be pinpointed. The area, however, is quite important and should receive a high significance rating.

Kiln Flats Area. This area begins at the western flank of the Hilly Border Area (Panaca Summit, NV. 7.5', T. 1 S., R. 70 E.) and extends to the eastern rim of Hamlight Canyon (Rose Valley, NV. 7.5', T. 1 S., R. 68 E., corner). The Kiln Flats Area contains a series of archaeology sites but many of them are scattered finds rather than living sites (Tucker, Christensen, and McEnany 1982:163-164). According to our Native American Research Associate who visited the area, these sites primarily would have been occupied by males involved in short term hunting and gathering trips while their families remained in the Hilly Border Area to process hides and plants. During the ethnobotany on-site visit medicine and food plants were collected within this area (see TABLES 30 and 31). The area is considered culturally significant because it is a part of the Hilly Border Area habitation area.

Hamlight Area. This area begins at the eastern rim of the Hamlight Canyon (Rose Valley, NV. 7.5', T. 1 S., R. 68 E.) and extends across the canyon to state highway 93 (Pioche, NV. 7.5', T. 1 S., R. 68 E.). The area was not visited during the study and no information came to light regarding specific cultural resources that may be located here. In addition, no archaeological resources were identified during the IPP survey. The ethnographic significance of the area is unknown.

TABLE 30: PLANTS OF INDIAN CONCERN FOUND IN IPP-NEVADA RIGHT-OF-WAY

BOTANICAL NAME	NUMIC NAME	COMMON NAME	LOCATION
1. <u>Ambrosia dumosa</u>		ragweed	Arrow Canyon , Nv. 15', T.15 S, R. 63 E
2. <u>Androstephium breviflorum</u>			Condor Canyon, Nv. 7.5', T.1 S Sec. 15-16
3. <u>Artemesia sp. tridentata</u>	sangwavi	sagebrush	Panaca Summit, Nv. 7.5', T.1 S, R. 69 E Sec. 15-16
4. <u>Asteraceae sp.</u>		aster	Condor Canyon, Nv. 7.5', T.1 S, R. 69 E Sec. 15-16
5. <u>Astragalus sp. purshii</u>		milkvetch	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
6. <u>Calochortus sp.</u>	sixo'o	sego lily mariposa lily	Condor Canyon, Nv. 7.5', T.1 S, R. 69 E Sec. 15-16
7. <u>Caulanthus crassicaulis</u>		squaw-cabbage	Condor Canyon, Nv. 7.5', T.1 S, R. 69 E Sec. 15-16
8. <u>Cassia armata</u>		senna	Sloan, Nv., 15', T. 25 S, R. 62 E; Eldorado Valley
9. <u>Chilopsis linearis</u>		desertwillow	Arrow Canyon, 15', T. 15 S, R.. 63 E
10. <u>Chrysothamnus nauseosus</u>	sikump	rabbitbrush	Panaca Summit, 7.5', T. 1 S, R. 70 E; NE Corner



TABLE 30: continued.

11.	<u>Cowania mexicana</u>	<del>anapa</del>	cliffrose "buckbrush"	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
12.	<u>Cryptantha sp.</u>			Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
13.	<u>Cymopterus multinervatus</u>	nampip	water parsnip	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
14.	<u>Descurainia pinnata</u>	ake	tansymustard	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
15.	<u>Echinocereus engelmannii</u>	usivwuits	hedge-hog cactus	Sloan, Nv. 15', T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
16.	<u>Encelia virginensis</u>		brittlebush	Sloan, Nv., 15', T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
17.	<u>Ephedra nevadensis</u>	tutupi tutuupi utuupi	Mormon tea jointfir	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain; Panaca Summit, Nv. 7.5', T. 1 S, R. 70 E; NE Corner
18.	<u>Eriogonum inflatum</u>		desert-trumpet bladderstem Indianpipe weed	Sloan, Nv., 15' T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
19.	<u>Eriogonum reniforme</u>		buckwheat brush	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
20.	<u>Euphorbia Albomarginata</u>	tuvipukaxi	spurge rattlesnake-weed	Sloan, Nv., 15' T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass

TABLE 30: continued.

21.	<u>Gaura coccinea</u>			Arrow Canyon, Nv. 15', T. 16 S, R. 63 E Sec. 3, 9, 16, 21, 28, 29, 32; Hidden Valley
22.	<u>Haplopappus acaulis</u>	apu'p		Condor Canyon, Nv. 7.5' T. 1 S, R. 69 E Sec. 15-16
23.	<u>Hilaria rigida</u>		big galleta	Sloan, Nv., 15' T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
24.	<u>Hymenoclea salsola</u>		burrobush	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
25.	<u>Juniperus osteosperma</u>	wa'apu wa'apampi	juniper/cedar berries	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
26.	<u>Krameria parviflora</u>		range ratany	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain Arrow Canyon, Nv. 15', T. 15 S, R. 63 E
27.	<u>Larrea tridentata</u>	yatamp yatump	creosote bush "greasewood"	Roach Lake NE, Nv. 15' T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
28.	<u>Linum lewisii</u>		flax	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
29.	<u>Lomatium sp.</u>		biscuitroot Indianroot	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16

TABLE 30: continued.

30.	<u>Lycium andersonii</u>	u'up u'upi	squawbush squawberry	Roach Lake NE, Nv. 15,, T. 26 S, R. 59, 60 E S-SW of Sheep Mountain Arrow Canyon, Nv. 15', T. 16 S, R. 63 E Sec. 3, 9, 16, 21, 28, 29, 32; Hidden Valley
31.	<u>Menodora spinescens</u>			Arrow Canyon, Nv. 15', T. 16 S, R. 63 E Sec. 3, 9, 16, 21, 28, 29, 32; Hidden Valley
32.	<u>Mentzelia albicaulis</u>	ku'u	blazing star stickleaf	Sloan, Nv., 15' T. 16 S, R. 63 E Sec. 3, 9, 16, 21, 28, 29, 32; Hidden Valley
33.	<u>Nicotiana trigonophylla</u>	koapi nangwakoap	tobacco	Sloan, Nv. 15', T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
34.	<u>Opuntia echinocarpa</u>		grizzly-bear cactus	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
35.	<u>Orobanche cooperi</u>	tu'u	broomrape	Arrow Canyon, Nv. 15', T. 15 S, R. 63 E
36.	<u>Oryzopsis hymenoides</u>	wa'ai	ricegrass	Sloan, Nv. 15', T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
37.	<u>Pentstemon pseudospectabilis</u>		beardtongue	Sloan, Nv. 15', T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
38.	<u>Phlox covillei hoodii</u>		phlox	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16

TABLE 30: continued.

39.	<u>Physalis crassifolia</u>		groundcherry	Sloan, Nv. 15', T. 25 S, R. 61 E Sec. 19-23; Peanutbutter Pass
40.	<u>Physaria chambersii</u>			Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
41.	<u>Rumex hymenosepalus</u>		dock wild rhubarb	Arrow Canyon, Nv. 15', T. 15 S, R. 631 E
42.	<u>Salizaria mexicana</u>		bladder-sage "paperbag bush"	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
43.	<u>Salvia columbariae</u>	saywav	chia sage	Sloan, Nv. 15', T. 25 S, R. 62 E; Eldorado Valley
44.	<u>Stanleya pinnata</u>	tamara nambita	desert plume "Indian spinach"	Arrow Canyon, Nv. 15', T. 15 S, R. 63 E
45.	<u>Stipa speciosa</u>		needlegrass	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
46.	<u>Streptanthella longirostris</u>			Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
47.	<u>Streptanthus cordatus</u>			Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
48.	<u>Townsendia scapigera</u>			Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16
49.	<u>Yucca brevifolia</u>		joshua tree	Delamar Lake, Nv. 7.5' T. 7 S, r. 63 E

TABLE 30: continued.

50. <u>Yucca schidigera</u>	tachumpi uusivi uusiv	yucca	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain
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Sources: Boyd field notes; Bunte and Stoffle field notes; Kearney and Peebles 1942; USGS Maps provided by ACT.

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Panaca Summit Section Mitigation. It is recommended that because of the high cultural importance of areas within this section that a NAO be present during all groundbreaking activities in (1) Hilly Border Area, and (2) Kiln Flats Area. If burials or artifact assemblages are found during IPP construction in the Hamlight area, the discovery should be reported to the tribal chairman of the Paiute Tribe of Utah.

#### BENNETT PASS SECTION

The Bennett Pass Section begins at state highway 93 where it is crossed by the IPP right-of-way (Pioche, Nv. 7.5', T. 1 S., R. 68 E.) and extends to the northern tip of the Burnt Springs Range. It includes IPP right-of-way located on the following USGS Nevada Quads: Pioche, Panaca, Bennett Pass, and The Bluffs. The section ends where the IPP right-of-way turns south into Dry Lake Valley (The Bluffs, Nv. 7.5', T. 2 S., R. 65 E., section 10).

Cathedral Gorge Flats Area. This area begins at state highway 93 and extends southwest to Bennett Pass (Bennett Pass, Nv. 7.5', T. 2 S., R. 67 E.). These flats are extremely arid grasslands that are heavily grazed. The ethnobotany visit indicated no plants of significance to Indian people. The IPP Nevada archaeology report records only isolated finds and one small site in this section (Tucker, Christensen and McEnany 1982: 165). It is an area of low cultural sensitivity.

Bennett Pass Area. This area begins at the southern tip of the Highland Range and extends to where the IPP right-of-way turns west-northwest at the southern tip of Black Canyon Range (The Bluffs, Nv. 7.5', T. 2 S., R. 65 E., section 10). Bennett Pass is one of the most important east-west travel routes within this portion of Southern Paiute territory. The most important cultural resource potentially impacted by the IPP right-of-way in this area, therefore, would be trails. Despite this and oral history confirmation regarding the importance of the area for travel, no trails were found by either the archaeology survey crews or ethnographic investigations. Only two isolated archaeological finds were made by the IPP survey crew (Tucker, Christensen, and McEnany 1982: 166). In the absence of additional site-specific evidence, the area is considered of moderate cultural significance.

Black Canyon Area. This area begins at the southern tip of the Black Canyon Range (Bennett Pass, Nv. 7.5', T. 2 S., R. 67 E.) and extends to the point where the IPP right-of-way turns southeastward (The Bluffs, Nv., 7.5', T. 2 S., R. 65 E., section 10). This area is arid, flat, and has no archaeological or botanical resources of concern to Indian people. An east-west Indian trail probably once passed through the area but no signs of it appear in the IPP archaeological or

ethnographic studies. The area is considered of low cultural significance.

Bennett Pass Section Mitigation. It is recommended that because of the low to medium cultural significance of areas within this section that no NAO be present during groundbreaking activities. The area does not contain plants of concern to Indian people. Given the possibility of finding an Indian trail in this area, it is recommended that additional archaeological survey work associated with right-of-way access roads or tower construction pay special attention to the possible presence of such a trail or trails. If burials or artifact assemblages are found during IPP construction in this section then the discovery should be reported to the tribal chairman of the Paiute Tribe of Utah.

#### DELAMAR VALLEY SECTION

The Delamar Valley Section begins at the northern tip of the Burnt Springs Range (The Bluffs, Nv., 7.5', T. 2 S., R. 65 E., section 10) and extends in a south-southeasterly direction past Delamar Lake to the foot of the pass formed by the convergence of the South Pahroc Range and the Delamar Mountains (Delamar Lake, Nv. 7.5', T. 8 S., R. 63 E.). The section includes IPP right-of-way located on the following USGS Nevada Quads: The Bluffs, Caliente NW, Pahroc Spring NE, Pahroc Spring SE, Delamar, Delamar NW, and Delamar Lake.

Valley Bottom Area. This area begins at the northern tip of the Burnt Springs Range (The Bluffs, Nv., 7.5', T. 2 S., R. 65 E., section 10) and extends to just east of the southern end of Delamar Lake (Delamar Lake, Nv. 7.5', T. 7 S., R. 63 E.). Only one Native American plant for which there was expressed concern (Joshua-tree, Yucca brevifolia), was found in this long portion of the IPP right-of-way. No archaeological habitation sites were found and only scattered artifact fragments were found by the IPP archaeological survey crew (Tucker, Christensen, and McEnany 1982: 167-171). The area is considered of low cultural significance.

Delamar Lake Uplands Area. This area begins at the southern tip of Delamar Lake (Delamar Lake, Nv. 7.5', T. 7 S., R. 63 E.) and extends for 2.5 miles to where the IPP right-of-way leaves the Delamar Valley through the pass between the South Pahroc and Delamar Mountains (Delamar Lake, Nv. 7.5', T. 7 S., R. 63 E.). This area was specified in the ethnographic interviews as being the known residential area of one of the Panaca groups during the historic period. In this area the archaeological survey crew found a concentration of lithic materials and one archaeological site--an Archaic chipping station (Tucker, Christensen, and McEnany 1982: 171). No plants of concern were mentioned during ethnographic interviews

and no on site ethnobotanical visit was made, although the study team did travel through the area. The area is considered as of moderate to high cultural significance.

Delamar Valley Section Mitigation. No mitigation is recommended for the Valley Bottom Area. Because of the expressed concerns and the presence of archaeological evidence of occupation, it is recommended that it be the option of the Paiute Tribe of Utah to place a NAO within the 2.5 miles of the Delamar Lake Uplands Area during groundbreaking activities. Because of the distance from Cedar City, however, it is recommended that the presence of the NAO at this area be discussed with the tribal chairman of the Paiute Tribe of Utah to see if the NAO presence is desirable.

#### ARROW CANYON VALLEY SECTION

The Arrow Canyon Valley Section begins at the pass that separates the South Pahroc Range and the Delamar Mountains (Delamar Lake, Nv. 7.5', T. 7 S., R. 63 E.), extends to the south past Kane Springs Wash, and ends at the southern tip of the Arrow Canyon Range (Dry Lake, Nv., 15', T. 18 S., R. 62 E.) where the IPP right-of-way turns to the east. The section includes IPP right-of-way located on the following USGS Nevada Quads: Delamar Lake, Delamar 3 NW, Lower Pahrnagat Lake, Lower Pahrnagat Lake SE, Delamar 3 SW, Wildcat Wash NW, Wildcat Wash SW, Arrow Canyon (15'), and Dry Lake (15').

The Arrow Canyon Valley is of special importance to the Moapa people. The explanation for this importance is presented in Chapter V. In addition, it was noted during the on site visit to the Moapa reservation that additional territorial expansion of the Moapa reservation would include the whole Arrow Canyon Valley. The Moapa people desire at least the same territory as allocated by the U. S. Government in 1874. The Arrow Canyon Valley therefore is unique among IPP right-of-way lands because of these specific tribal plans for its reincorporation under Native American control.

Maynard Lake Area. This area begins where the pass is formed by the South Pahroc Range and the Delamar Mountains (Delamar Lake, Nv., 7.5', T. 7 S., R. 63 E.), extends through the pass, turns south and crosses state highway 93, proceeds south along the west side of highway 93, and ends where the IPP right-of-way crosses to the east side of highway 93 (Delamar 3 SW, Nv. 7.5', T. 10 S., R. 62 E.). No plants of importance were recorded in the mountain pass portion of this area but numerous plants of importance have been recorded in the Arrow Canyon Valley. The archaeological record indicates no sites in the pass but ten sites and a few scattered finds were recorded in the Arrow Canyon Valley (Tucker, Christensen, and McEnany 1982: 172-173). The area is considered moderate to high level



of cultural significance.

Coyote Spring Area. This area begins where the IPP right-of-way crosses to the east side of highway 93 (Delamar 3 SW, Nv. 7.5', T. 10 S., R. 62 E.) and extends to the end of the Arrow Canyon Range (Dry Lake, Nv., 15', T. 18 S., R. 62 E.) where the IPP right-of-way turns east. This section includes a wide range of food and medicine plants (see TABLE 31). The large desert tortoise is an animal of concern here. The area contains portions of the original Indian trail-wagon road from Moapa Valley to Pahrnagat Valley settlements like Alamo. Portions of this old Indian trail-wagon road were found by study team members and a Moapa elder during the ethnobotany study. The trail-wagon road has been destroyed throughout most of its length by a jeep trail used by cattle ranchers in the area. Portions of the original trail-wagon road are still visible in certain stretches of "desert pavement" located along the western side of the Pahrnagat Wash (Wildcat Wash SW, Nv., 7.5', T. 13 S., R. 63 E., section 34). Although the trail-wagon road is located outside of the IPP right-of-way, concern was expressed that any improvement of the jeep trail would destroy the remaining portions of the old trail-wagon road. Archaeological survey revealed 9 sites and 20 scattered finds (Tucker, Christensen, and McEnany 1982: 173-178), all within the IPP right-of-way.

Arrow Canyon Valley Section Mitigation. The Maynard Lake Area of the IPP right-of-way contains a number of important cultural resources, but it parallels an existing power transmission line so partial disruption of these resources has already occurred. For this reason, it is recommended that a NAO from the Moapa Tribe be present during any archaeological groundbreaking activities that may occur. A NAO is not recommended during construction in this area. The Moapa Indian Tribe should be contacted if any burials or artifact assemblages are discovered during IPP construction.

The Coyote Spring Area not only contains numerous cultural resources of the Moapa people but the area is largely undisturbed by development activity. Given its rough terrain ORVs do not travel into this section of the valley as they do elsewhere where roads provide better access. Because the area is culturally important and is largely undisturbed, it is recommended that the IPP right-of-way be relocated to parallel the existing power transmission line on the west side of highway 93. If this recommendation is not accepted and construction occurs in this area, it is recommended (1) that a NAO be present during all groundbreaking activities, (2) certain plants of cultural importance be transplanted at the Moapa Indian Reservation, and (3) the remaining portions of the old Indian trail-road from Moapa to the Pahrnagat Valley be protected from construction activities.

## APEX SECTION

The Apex Section begins at the southern tip of the Arrow Canyon Range where the IPP right-of-way turns to the east (Dry Lake, Nv., 15' T. 19 S., R. 63 E.) and extends across highway 15 to where the IPP right-of-way turns southwest (Dry Lake, Nv., 15' T. 19 S., R. 64 E.). The area appears on only the two topographic maps mentioned above.

No Native American cultural resources were mentioned as being located in this section. The archaeological survey found no sites or isolated finds in this area (Tucker, Christensen, and McEnany 1982: 178). The area is considered of low cultural significance.

Apex Section Mitigation. No mitigation recommendations are being made.

## FRENCHMAN MOUNTAIN SECTION

The Frenchman Mountain Section begins where the IPP right-of-way turns southwest after crossing highway 15 (Dry Lake, Nv., 15', T. 19 S., R. 64 E.) and extends due south until the right-of-way crosses highway 93 just three miles southeast of Henderson (Boulder City NW, 7.5', T. 22 S., R. 63 E., section 35). The section crosses lands located on the following USGS Quads: Dry Lake (15'), Frenchman Mountain, Henderson, and Boulder City NW.

Rainbow Garden Area. This area begins where the IPP right-of-way turns southwest after crossing highway 15 (Dry Lake, Nv., 15', T. 19 S., R. 64 E.) and extends past the Sunrise and Frenchman Mountains to a point where the right-of-way crosses the jeep trail just north of the Las Vegas Wash (Henderson, Nv., 7.5', T. 21 S., R. 63 E., section 21).

Interviews with Las Vegas and Pahrump people indicated a strong concern for these two mountains. The returned surveys (see TABLE 19) reaffirmed this concern with Sunrise Mountain receiving the highest degree of concern given any place in the study area (2.70) and Frenchman Mountains receiving a somewhat lower level of concern (2.10). The most important location in Sunrise Mountain is Gypsum Cave. The sacredness of this cave has already been discussed as an example of important places in the Southern Paiute Holy Land (see Chapter IV). It is a cave where Southern Paiute holy men went to seek power. It was excavated by Harrington in the early 1930s. Current use patterns of the cave have not been revealed by Paiute people. The mouth of the cave is immediately adjacent to the IPP right-of-way (Frenchman Mountain, Nv., 7.5', T. 20 S., R. 63 E.)

One elder of the Las Vegas group mentioned a sacred cave located in the Frenchman Mountains. The location of this cave could not be determined by the study team because the elder was too sick to travel to the field.

No ethnobotanical visits were made in this area, however, the plants of expressed concern to the Las Vegas and Pahrump people are listed in TABLE 24. Four sites and two isolated finds were recorded in this area by the IPP archaeology crew (Tucker, Christensen, and McEnany 1982: 178-181). The area is considered of high cultural significance.

The Las Vegas Wash Area. This area begins where the IPP right-of-way crosses the jeep trail just north of the Las Vegas Wash (Henderson, Nv., 7.5, T. 21 S., R. 63 E., section 21) and extends until the right-of-way crosses highway 93 just three miles southeast of Henderson (Boulder City NW. 7.5', T. 22 S., R. 63 E., section 35).

The area has been recently occupied by the Las Vegas people and there are published records that one of the major group leaders was buried in the Las Vegas Wash. The location of this burial has not been revealed by the Las Vegas people. A series of major archaeology sites have been found by the IPP archaeology surveyors who recommended that an area within the wash be considered as a National Register Archaeological District (Tucker, Christensen, and McEnany 1982: 181). No ethnobotanical study was conducted at this site. This portion of the area is considered of high cultural significance.

As the IPP right-of-way passes south of the wash only scattered artifact finds were recorded. This portion of the area is considered of low cultural significance.

Frenchman Mountain Section Mitigation. The Rainbow Garden Area is of high significance to the Las Vegas and Pahrump people due to the location of one and probably two sacred caves where religious leaders went and perhaps still go to receive spiritual power. The mitigation of these locations is made difficult because (1) the Gypsum Cave site has already been excavated and picked over by local Indian relic hunters, (2) the second cave location is not known by researchers, and (3) neither cave will be directly impacted by the IPP right-of-way. There is clear potential for an indirect impact to the Gypsum Cave, because the line passes just in front of its entrance. Mitigation procedures should be developed to protect Gypsum Cave from indirect impacts due to IPP. Native Americans at Las Vegas and Pahrump should participate in the development of such procedures.

For the Las Vegas Wash Area it is recommended that a NAO be present during all groundbreaking activities from the crossing of the jeep trail in the northern portion of the recommended Archaeological District. In determining the

eligibility of the Las Vegas Wash area as a National Register Archaeological District, ethnobotanical studies should be undertaken.

Throughout this section where no NAO is present, discovery of burials or artifact assemblages found during IPP construction should be reported to the chairmen of the Las Vegas Paiute Tribe and the Pahrump Paiute Tribe.

#### ELDORADO VALLEY SECTION

The Eldorado Valley Section begins where the IPP right-of-way crosses highway 93 just southeast of Henderson (Boulder City NW, 7.5', T. 22 S., R. 63 E., section 35), extends past the Black Hills, passes along the western edge of the valley, and ends where the IPP right-of-way turns west just above the McCullough Power Substation (Sloan, Nv. 15', T. 25 S., R. 62 E., section 19). This section includes lands located on the following USGS Quads: Boulder City NW, Boulder City SW, and Sloan (15').

Extensive concern was expressed for this valley; however, most of the cultural resources of concern were located on the eastern side of the valley. Historic occupation sites were of special concern because so many living people and their immediate relatives have lived and worked in the valley. The only cultural resource that will be directly impacted by the IPP right-of-way are Native American plants. Of special concern are the large cacti. The archaeological survey recorded one historic period site and four isolated finds (Tucker, Christensen, and McEnany 1982: 182-183). That portion of the valley crossed by the IPP right-of-way is considered to be of low to medium cultural significance.

Eldorado Valley Section Mitigation. No NAO is recommended to be present during groundbreaking activities in this section. This recommendation is based on (1) the lack of evidence of major archaeology features, and (2) the disturbed nature of the lands through which the IPP right-of-way passes as it parallels two existing power transmission lines. It is recommended that the disposition of the large cacti from this section be a topic of discussion with the Las Vegas and Pahrump tribal representatives at the preconstruction meeting.

#### MCCULLOUGH RANGE SECTION

The McCullough Range Section begins where the IPP right-of-way turns west just above the McCullough Power Substation (Sloan, Nv., 15', T. 25 S., R. 62 E., section 19), extends through an unnamed pass in the McCullough Range, and ends at

the southwestern corner of the Sheep Mountains (Roach Lake, Nv., 15', upper right center section). This section contains lands located on the following Quads: Sloan (15'), and Roach Lake (15').

Tumpikan Area. This area begins at the westward turn of the IPP right-of-way just above the McCullough Power Substation (Sloan, Nv., 15', T. 25 S., R. 62 E., section 19) and extends to the foot of the pass through the McCullough Range (Sloan, Nv., 15', T. 25 S., R. 61 E., section 21).

The area has been recently occupied by Paiute people as indicated by two on-site visits with tribal elders. There are extensive stretches where the IPP right-of-way will impact plants of concern. Some will be stimulated by disturbing the ground such as the Mentzelia in sections 23 and 24 (Sloan, Nv., 15', T. 25 S., R. 61 E.) while other plants like the barrel cactus could be destroyed. The area contains the rock foundation of a Paiute stone house called Tumpikan which is located in section 22. Also nearby is a cairn which is probably a Paiute trail marker according to elders. A third cultural feature located in the section 21 of this area is a rock shelter with associated sheep petroglyph and stone mortars. This area is considered of high cultural significance.

Peanutbutter Pass Area. This area begins where the road starts up into the McCullough Range (Sloan, Nv. 15', T. 25 S., R. 61 E., section 21 and ends on the west side of the pass where the right-of-way turns southwest (Sloan, Nv., 15', T. 25 S., R. 61 E., section 19). "Peanutbutter" is the project name for this unnamed pass.

The area contains a number of plants found to be of concern during the ethnobotany study (see TABLES 30 and 31). One of the most important of these is Indian Tobacco. In addition, the existing road has a series of cairns along its north side. Some of these appear to be associated with mining claims, others with previously constructed transmission line towers, while others are considered by the tribal elders as markings for an Indian trail. The trail has apparently been destroyed by the existing power line access road. The area is considered to be of high cultural significance. No archaeological finds were recorded in this area.

Jean Lake Flats Area. This area begins on the bajada slopes where the right-of-way turns southwest on the west side of the Peanutbutter Pass Area (Sloan, Nv., 7.5', T. 25 S., R. 61 E., section 19) and extends until the southwestern corner of the Sheep Mountains (Roach Lake, Nv., 15').

The major cultural features in this area are plants. These have been listed in TABLES 30 and 31 in this chapter. No archaeological features were found in this area (Tucker, Christensen, and McEnany 1982: 184-186). The area is

considered of low to moderate cultural significance.

McCullough Range Section Mitigation. It is recommended that a NAO be present during any archaeological excavation in this section. It is recommended that a Native American plant specialist accompany the archaeological study team during the IPP access road survey to provide an opportunity to avoid certain plants of Native American concern in sections 21 and 20, of Sloan, Nv., 15', T. 25 S., R. 61 E. Because the Tumpikan, rock shelter, and rock cairn in section 21 are not in the right-of-way, they will not be directly impacted by it. However, they may be impacted by construction activity such as upgrading the existing power transmission line access road through Peanutbutter Pass. It is recommended that mitigation measures be developed to protect these cultural resources in consultation with Pahrump and Las Vegas Tribal chairmen before construction begins.

If burials or artifact assemblages are found during IPP construction, the discovery should be reported to the Las Vegas and Pahrump chairmen.

#### IVANPAH VALLEY SECTION

The Ivanpah Valley Section begins at the southwestern corner of the Sheep Mountains (Roach Lake, Nv., 15') and extends to the Nevada-California state border (Roach Lake SW, Nv., 15'). This section includes lands located on the following USGS Quad: Roach Lake (15').

The Ivanpah Valley, in general, is quite an important valley. It has been the site of very recent occupations by Pahrump and Las Vegas Paiute people. It is probably crossed in its southern section by a series of residual Indian trails. The quality of these trails is very much open to question. Only one has been found. It is located in California near the foot of the Clark Mountains. The area is of historic and pre-historic importance to living Indian people. There have, however, been no specific cultural resources located in the IPP right-of-way.

Ivanpah Valley Section Mitigation. No mitigation is recommended. If burials or artifact assemblages are discovered during IPP construction, the discovery should be reported to the Las Vegas and Pahrump Tribal chairman.

TABLE 31: IPP-NEVADA RIGHT-OF-WAY LOCATION OF INDIAN PLANTS

IPP LOCATION	USGS MAP	PLANT KEY (from TABLE 30)
PANACA SUMMIT SECTION		
Hilly Border Area	Panaca Summit, Nv. 7.5', T. 1 S, R. 70 E NE Corner	3;10;17
Kiln Flats Area	Rose Valley, Nv. 7.5', T. 1 S, R. 68 E SW Corner;	-
	Condor Canyon, Nv. 7.5', T. 1 S, R. 69 E Sec. 15-16	2;4;5;6;7;11; 12;13;14;22; 25;28;29;38; 40;46;47;48
Hamlight Area	Pioche, Nv. 7.5', T. 1 S, R. 68 E	-
BENNETT PASS SECTION		
Cathedral Gorge Flats Area	Bennett Pass, Nv. 7.5', T. 2 S, R. 67 E	-
Bennett Pass Area	The Bluffs, Nv. 7.5', T. 2 S, R. 65 E Sec. 10	-
DELAMAR VALLEY SECTION		
Valley Bottom Area	Delamar Lake, Nv. 7.5', T. 7 S, R. 63 E	50
Delamar Lake Uplands Area	Delamar Lake, Nv. 7.5', T. 7 S, R. 63 E	-
ARROW CANYON VALLEY SECTION		
Maynard Lake Area	Delamar Lake Nv. 7.5', T. 7 S, R. 63 E	-
Coyote Spring Area	Delamar 3 SW, Nv. 7.5', T. 10 S, R. 62 E;	-
	Arrow Canyon, Nv. 15', T. 15 S, R. 63 E;	1;9;26;35;41; 44

TABLE 31: continued.

	Arrow Canyon, Nv. 15', T. 16 S, R. 63 E Sec. 3,9,16,21,28-29,32 (Hidden Valley)	21;30;31
APEX SECTION		
	Dry Lake SW, Nv. 15' T. 19 S, R. 63 E	-
FRENCHMAN MOUNTAIN SECTION		
Rainbow Garden Area	Dry Lake SE, Nv. 15' T. 19 S, R. 64 E Sec. 21	-
Las Vegas Wash Area	Henderson, Nv. 7.5' T. 21 S, R. 63 E Sec. 21	-
ELDORADO VALLEY SECTION		
	Boulder City NW, Nv. 7.5' T. 22 S, R. 63 E Sec. 25	15;34
MCCULLOUGH RANGE SECTION		
<u>Tumpikan Area</u>	Sloan, Nv., 15', T. 25 S, R. 61 E Sec. 21-23	15;16;18;20; 23;32;33;36; 37;39
Peanutbutter Pass Area	Sloan, Nv., 15', T. 25 S, R. 61 E Sec. 20-21 (Peanutbutter Pass)	15;16;18;20; 23;32;33;36; 37;39
Jean Lake Flats Area	Sloan, Nv., 15', 7.5' T. 25 S, R. 61 E Sec. 19;	15;16;18;20; 23;32;33;36; 37;39
	Sloan, Nv., 15', T. 25 S, R. 62 E (Eldorado Valley)	8;43
IVANPAH VALLEY SECTION		
	Roach Lake NE, Nv. 15', T. 26 S, R. 59, 60 E S-SW of Sheep Mountain	17;19;24;26; 27;30;34;42; 45;49

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Sources; TABLE 30; Boyd field notes; Bunte and Stoffle field notes;  
USGS maps provided by ACT.

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## APPENDIX

### A. Project Related Maps

1. Overall Project Map: Note additional proposed transmission lines which are not currently being considered.
2. Kelly (1934) map of Southern Paiute Bands: Note that this report calls the meaning and location of many of these boundaries into question.

### B. Survey Questionnaire and Cover Letter

### C. ACT Letters of Introduction to Tribal Chairmen

### D. Official Tribal Responses

1. Pahrump Tribal Response
2. Kaibab Paiute Tribal Response
3. Paiute Indian Tribe of Utah Response



**University of Wisconsin—Parkside**  
Box No. 2000  
Kenosha, Wisconsin 53141



Division of Behavioral Science  
Telephone: 414 553-2658

April 1, 1982

Greetings:

A group of electrical companies are asking for permission to build a large power line through lands that once belonged to Indian People. Before the Bureau of Land Management can give that permission, studies must record what effects the power line may have on Indian cultural resources. This survey is one way for you as an Indian person to make your feelings known.

Since mid-December of 1981 we have been talking with tribal governments at Pahrump, Las Vegas, Moapa, Cedar City, and Goshute. Public meetings have been held at each place. We have also talked with people who know about the study area. Unfortunately, time has not allowed us to visit with every member in each tribe. This survey is a way to provide each adult tribal member an opportunity to comment.

Please take a few minutes to look at the enclosed map. The proposed route of the power line is marked with short dashes (- - - - -). In the south it begins at the California-Nevada border near Whiskey Pete's Casino on Highway 15. Then it moves north-east through the McCullough Range, past Henderson, across Highway 15 again near Apex, up the Arrow Canyon Range, through the Delamar Valley, and then east between Pioche and Panaca.

Although no reservations are crossed, all the land once belonged to Indian people. Are there things of importance to you along any portion of this route? Please fill out the enclosed survey so that we may record your comments.

The map is yours to keep. If you wish help with this survey contact your tribal representative to this project. His or her name is listed on the last page of the survey. Then, as soon as possible, mail the survey form in the enclosed envelope.

Thank you,

Richard W. Stoffle  
Director, A.U.F.S.  
(414) 553-2499

1. The following Indian cultural items were mentioned by Paiute and Goshute people during earlier interviews. Next to the list of items that may be influenced by the power line is a space. Please circle the number that indicates how concerned you are about each item.

<u>Cultural Items</u>	<u>My Degree of Concern is</u>		
	<u>No Concern</u>	<u>Some Concern</u>	<u>Much Concern</u>
Basket Plants	1	2	3
Medicine Plants	1	2	3
Food Plants	1	2	3
Rock Carvings-Paintings	1	2	3
Clay or Rock Mines	1	2	3
Religious Areas	1	2	3
Burial Sites	1	2	3
Small Ground Animals	1	2	3
Large Ground Animals	1	2	3
Birds	1	2	3
Trails - Shrines	1	2	3
Springs	1	2	3

If you think there are other cultural items that may be changed by the building of this power line, please record them in the space below.

2. The following is a list of English names for places where Indian people lived. The place names are listed from the bottom to the top of the enclosed map. Each of these places will be crossed or be close to the route of the power line. Please read a place name and then circle to the right just how concerned you would be if the power line passed through that place.

<u>Indian Places</u>	<u>My Degree of Concern is</u>		
	<u>No Concern</u>	<u>Some Concern</u>	<u>Much Concern</u>
Clark Mountains	1	2	3
Whiskey Spring	1	2	3
Ivanpah Lake	1	2	3
Ivanpah Valley	1	2	3
Roach Lake	1	2	3
Sheep Mountain (south of Jean Lake)	1	2	3
Jean Lake	1	2	3
Hidden Valley (east of Jean Lake)	1	2	3
McCullough Range	1	2	3
Eldorado Valley	1	2	3
Black Hill (south of Henderson)	1	2	3
Rainbow Gardens	1	2	3
Frenchman Mountains	1	2	3
Sunrise Mountains	1	2	3
Dry Lake Range	1	2	3
Dry Lake Valley	1	2	3
Arrow Canyon Range	1	2	3
Hidden Valley (by Arrow Canyon Range)	1	2	3
Kane Springs Wash	1	2	3



	<u>No Concern</u>	<u>Some Concern</u>	<u>Much Concern</u>
Southern Pahrangat Valley	1	2	3
Delamar Mountains	1	2	3
Delamar Dry Lake	1	2	3
Historic Town of Delamar	1	2	3
Burnt Springs Range	1	2	3
The Bluffs	1	2	3
Black Canyon Range	1	2	3
Bennett Pass	1	2	3
Cathedral Gorge State Park	1	2	3
Condor Canyon	1	2	3

NOTE: Are there other places you are concerned about? If so,  
list them here:

Now I would like to ask you just a few more short questions about this proposed power line. Please write your answers in the space between questions or on the back of the page.

3. How do you feel about the proposal to build more transmission lines through your traditional lands?

4. What are your feelings when you see large power lines and their towers crossing the desert valleys or mountains?

5. If Indian tools or living sites are uncovered by power line construction what should be done with them?

6. If the burial sites of Indian people are uncovered by power line construction what should be done with them?

7. Do you believe that Indian peoples' opinions recorded in this study will be heard and listened to by the utility companies?

- If I may, I would now like to ask a few background questions.

8. Where do you now live? \_\_\_\_\_ On a reservation or off a reservation?

9. How long have you been in the area you now live in?

10. Did your parents live in this area or in a different one?

If it was a different area, where did they live?

11. What is your occupation?

12. What year were you born? \_\_\_\_\_

Thank you for taking the time to answer these questions. If you would have any questions concerning this survey, please contact me:

by phone at: (414)-553-2499

or write: Dr. Richard Stoffle  
294 Tallent Hall  
University of Wisconsin-Parkside  
Box 2000  
Kenosha, WI 53141

or speak to your own tribal representative:

Mr. Richard Arnold at Pahrump  
Ms. Gloria Yazze at Las Vegas  
Mr. Philbert Swain at Moapa  
Ms. Geneal Anderson at Cedar City  
Ms. Cynthia Keoke at Goshute

or discuss the project with your tribal leaders, who will receive a copy of the report for their comments.

APPENDIX C: ACT LETTERS OF INTRODUCTION TO TRIBAL CHAIRMEN



APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155

FULLERTON, CALIFORNIA 92635 • (714) 738-8992

December 10, 1981

Mr. Richard Arnold, Chairman  
Pahrump Paiute Tribe  
P.O. 73  
Pahrump, Nevada 89041

Subject: Intermountain Power Project  
Intermountain-Adelanto Bipole I  
Transmission System, Cultural Resources  
Field Studies-Nevada Section

References: Applied Conservation Technology, Inc.  
Letter of Introduction, dated October 2,  
1981

Dear Mr. Arnold:

I would like to update you on the status of the cultural resource study for the Intermountain Power Project (IPP) in California. You may recall the November 23 Letter of Introduction from Gary Dudley, ACT Vice-President, which outlined IPP Specifications, the required environmental studies and the advice we need from you.

At this time, I wish to inform you that Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Nevada. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with Pahrump Paiute tribal members.

We expect to receive authorization to proceed with the cultural resource studies by mid-December and Dr. Stoffle will be contacting you very shortly thereafter. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Edward B. Weil, Ph.D.  
Cultural Resources  
Principal Investigator

EBW/sh

cc: Dr. Richard Stoffle



APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155

FULLERTON, CALIFORNIA 92635 • (714) 738-89

December 10, 1981

Mr. Billy Frye, Chairman  
Las Vegas Paiute Tribe  
1 Paiute Drive  
Las Vegas, Nevada 89106

Subject: Intermountain Power Project  
Intermountain-Adelanto Bipole I  
Transmission System, Cultural Resources  
Field Studies-Nevada Section

References: Applied Conservation Technology, Inc.  
Letter of Introduction, dated October 2,  
1981

Dear Mr. Frye:

I would like to update you on the status of the cultural resource study for the Intermountain Power Project (IPP) in California. You may recall the November 23 Letter of Introduction from Gary Dudley, ACT Vice-President, which outlined IPP Specifications, the required environmental studies and the advice we need from you.

At this time, I wish to inform you that Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Nevada. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with Las Vegas Paiute tribal members.

We expect to receive authorization to proceed with the cultural resource studies by mid-December and Dr. Stoffle will be contacting you very shortly thereafter. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Edward B. Weil, Ph.D.  
Cultural Resources  
Principal Investigator

EBW/sh

cc: Dr. Richard Stoffle ✓ -266-



APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155  
FULLERTON, CALIFORNIA 92635 • (714) 738-8992

December 10, 1981

Mr. Preston Tom, Chairman  
Moapa Paiute Tribe  
P.O. 56  
Moapa, Nevada 89025

Subject: Intermountain Power Project  
Intermountain-Adelanto Bipole I  
Transmission System, Cultural Resources  
Field Studies-Nevada Section

References: Applied Conservation Technology, Inc.  
Letter of Introduction, dated October 2,  
1981

Dear Mr. Tom:

I would like to update you on the status of the cultural resource study for the Intermountain Power Project (IPP) in California. You may recall the November 23 Letter of Introduction from Gary Dudley, ACT Vice-President, which outlined IPP Specifications, the required environmental studies and the advice we need from you.

At this time, I wish to inform you that Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Nevada. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with Moapa Paiute tribal members.

We expect to receive authorization to proceed with the cultural resource studies by mid-December and Dr. Stoffle will be contacting you very shortly thereafter. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Edward B. Weil, Ph.D.  
Cultural Resources  
Principal Investigator

EBW/sh

cc: Dr. Richard Stoffle -267-



APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155  
FULLERTON, CALIFORNIA 92635 • (714) 738-1  
December 10, 1981

Mrs. Geneal Anderson, Chairperson  
Indian Peaks Paiute Tribe  
20 West Paiute Drive  
Las Vegas, Nevada 90106

Subject: Intermountain Power Project  
Intermountain-Adelanto Bipole I  
Transmission System, Cultural Resources  
Field Studies-Nevada Section

References: Applied Conservation Technology, Inc.  
Letter of Introduction, dated October 2,  
1981

Dear Mrs. Anderson:

I would like to update you on the status of the cultural resource study for the Intermountain Power Project (IPP) in California. You may recall the November 23 Letter of Introduction from Gary Dudley, ACT Vice-President, which outlined IPP Specifications, the required environmental studies and the advice we need from you.

At this time, I wish to inform you that Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Nevada. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with Indian Peaks Paiute tribal members.

We expect to receive authorization to proceed with the cultural resource studies by mid-December and Dr. Stoffle will be contacting you very shortly thereafter. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Edward B. Weil, Ph.D.  
Cultural Resources  
Principal Investigator

EBW/sh

cc: Dr. Richard Stoffle -268-



APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155

FULLERTON, CALIFORNIA 92635 • (714) 738-8992

December 10, 1981

Mrs. Marguerite Lane, Chairperson  
Cedar City Paiute Tribe  
600 Worth, 100 East  
Cedar City, Utah 84720

Subject: Intermountain Power Project  
Intermountain-Adelanto Bipole I  
Transmission System, Cultural Resources  
Field Studies-Nevada Section

References: Applied Conservation Technology, Inc.  
Letter of Introduction, dated October 2,  
1981

Dear Mrs. Lane:

I would like to update you on the status of the cultural resource study for the Intermountain Power Project (IPP) in California. You may recall the November 23 Letter of Introduction from Gary Dudley, ACT Vice-President, which outlined IPP Specifications, the required environmental studies and the advice we need from you.

At this time, I wish to inform you that Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Nevada. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with Cedar City Paiute tribal members.

We expect to receive authorization to proceed with the cultural resource studies by mid-December and Dr. Stoffle will be contacting you very shortly thereafter. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Edward B. Weil, Ph.D.  
Cultural Resources  
Principal Investigator

EBW/sh

cc: Dr. Richard Stoffle





APPLIED CONSERVATION TECHNOLOGY, INC.

223 EAST IMPERIAL HIGHWAY, SUITE 155  
FULLERTON, CALIFORNIA 92635 • (714) 738-89

December 10, 1981

Mr. Dan Murphy  
Confederated Tribes of the Goshute Reservation  
General Delivery  
Ibapah, Utah 84034

Subject: Intermountain Power Project  
Intermountain-Adelanto Bipole I  
Transmission System, Cultural Resources  
Field Studies-Nevada Section

References: Applied Conservation Technology, Inc.  
Letter of Introduction, dated October 2,  
1981

Dear Mr. Murphy:

I would like to update you on the status of the cultural resource study for the Intermountain Power Project (IPP) in California. You may recall the November 23 Letter of Introduction from Gary Dudley, ACT Vice-President, which outlined IPP Specifications, the required environmental studies and the advice we need from you.

At this time, I wish to inform you that Dr. Richard Stoffle, University of Wisconsin-Parkside, has been selected as our ethnographic subconsultant who will perform the required ethnographic resources field studies in Nevada. Dr. Stoffle will be contacting you directly regarding the arrangements to be made for initiating a series of interviews with Goshute Reservation tribal members.

We expect to receive authorization to proceed with the cultural resource studies by mid-December and Dr. Stoffle will be contacting you very shortly thereafter. Should you have any immediate questions, please call me at (714) 738-8992.

Yours truly,

Edward B. Weil, Ph.D.  
Cultural Resources  
Principal Investigator

EBW/sh

cc: Dr. Richard Stoffle

July 1, 1982

Dr. Richard Stoffle  
Director, Applied Urban Field Studies  
University of Wisconsin - Parkside  
Kenosha, Wisconsin 53141

Dear Dr. Stoffle;

After review of the Intermountain Power Project study entitled NĖVĖGANTĖ, it is the general consensus of the Pahrump Paiutes that it is a very thorough and concise report. We feel that it is representative of our responses and general feelings expressed during numerous interviews conducted during on-site visits, etc.

When this project gets underway the Indian people from the Pahrump area are very much concerned with the discovery of any artifacts, burial sites and their disposition. It is our feeling that any artifacts discovered in our "traditional areas" would be sent to the Pahrump Band of Paiutes, so that we can begin to preserve significant parts of our past.

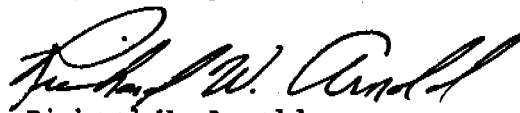
Any burial sites which are located, we feel that we should be notified of such findings, so that we can instruct I.P.P. staff/workers how to properly handle such discoveries in accordance with our beliefs.

Since numerous plants in our traditional areas have been and still are very important to us, we would recommend to avoid any plants wherever possible during all phases of this construction.

When any type of construction or ground breaking is instituted, the possibility of discovering artifacts and burial sites of any kind is very high and this remains a very sensitive area to the Pahrump Paiutes. It is for this reason that we request to have on-site observation by at least one (1) tribal member during any construction, ground breaking or any kind of archeological research conducted.

On behalf of the Pahrump Band of Paiutes, I would like to extend our sincere appreciation to you for your time, patience, and understanding you expel during this project.

Respectfully,

  
Richard W. Arnold

# KAIBAB PAIUTE TRIBE

TRIBAL AFFAIRS BUILDING ★ FREDONIA, ARIZONA 86022 (602) 643-5519

Received AAFS  
May 24, 1982

May 17, 1982

Dr. Richard W. Stoffle  
IPP Study  
University of Wisconsin-Parkside  
Kenosha, WI 53141

Dear Dr. Stoffle:

We have studied the NUVGANTU, Nevada Indians Comment on the Inter-mountain Power Project, Adelanto Bipole I Proposal and concur with the Study. We especially are pleased of your use of the OTCR team. To us, it is a significant indication of the kind of cooperation that can be achieved through proper approach.

Enclosed are copies of our Planning Committee's memorandum and our Tribal Resolution No. 12.

Sincerely,

*Bill Tom*  
BILL TOM  
Chairman

BT:jal

Enclosures

# KAIBAB PAIUTE TRIBE

TRIBAL AFFAIRS BUILDING ★ FREDONIA, ARIZONA 86022 (602) 643-5545

## RESOLUTION

K-12-82

### KAIBAB BAND OF PAIUTE INDIANS

- WHEREAS, the Intermountain Power Project is a consortium of twenty-three Utah municipalities who have been authorized to build and operate a coal-fired, 3,000 megawatt steam electric generating facility near Delta, Utah; and
- WHEREAS, IPP is scheduled to begin construction of the generating plant on August 1982; and
- WHEREAS, this transmission system is to convey electricity from four planned 750-mw generating units to the participants, the Utah System and the Southern California System; and
- WHEREAS, the Southern California component is comprised of two 500 kV Direct Current (DC) Transmission Lines crossing portions of Southwestern Utah, Southern Nevada and Southern California; and
- WHEREAS, the NUVUGANTW, is a study that deals with Native American Cultural resources within the Nevada Section of the corridor for the northern line in the Southern California System--the Intermountain-Adelanto Bipole I line; and
- WHEREAS, the present study identifies certain Southern Paiute people across whose aboriginal territory the proposed IPP corridor for the IPP Intermountain-Adelanto Bipole I transmission line would be constructed; and
- WHEREAS, tribal members of Southern Paiutes in the State of Nevada have expressed their concerns regarding the value they place upon cultural resources they feel will be adversely affected by this development of high voltage transmission lines; and
- WHEREAS, this present study includes the Southern Paiute recommendations for mitigating adverse impacts of the HVTL development upon their cultural heritage; and
- WHEREAS, legal mandates require that Southern Paiutes participate in such studies; and
- WHEREAS, the Kaibab-Paiutes are a part of the Southern Paiute Nation, and are, thus, indirectly affected by this IPP construction;

RESOLUTION  
K-12-82  
MAY 19, 1982  
PAGE 2

NOW, THEREFORE, BE IT RESOLVED THAT, the Kaibab-Paiute people wholeheartedly endorse and support the concerns and requests of the Moapa, Las Vegas, Pahrump and other Nevada Native American people which is addressed in the Report submitted, 4/26/82, by the Applied Urban Field School, University of Wisconsin-Parkside to the Applied Conservation Technology Incorporated.

C E R T I F I C A T I O N

I hereby certify that the foregoing resolution was regularly adopted by the Kaibab-Paiute Tribal Council on May 19, 1982, at a regularly scheduled meeting at which a quorum was present with unanimous vote in favor, pursuant to authority vested in the Kaibab-Paiute Tribal Council by Section 1 (k) at Article V of the Tribal Constitution and By-Laws, ratified by the Tribe on May 15, 1951, and approved by the Secretary of the Interior on June 15, 1951, pursuant to Section 16, of the Act of June 18, 1934.

Bill Tom  
BILL TOM, CHAIRMAN  
KAIBAB PAIUTE TRIBAL COUNCIL

ATTEST:

Claudina T. Benson  
CLAUDINA T. BENSON, SEC/TREAS.  
KAIBAB PAIUTE TRIBAL COUNCIL

# KAIBAB PAIUTE TRIBE

PLANNING COMMITTEE

TRIBAL AFFAIRS BUILDING ★ FREDONIA, ARIZONA 86022 (602) 643-5514

May 17, 1982

## M E M O R A N D U M

TO: Tribal Council

Through: Fred Drye

FROM: Planning Committee

SUBJECT: IPP (Intermountain Power Project)  
Nevada Indians Comment on Adelanto  
Bipole I Proposal

The Planning Committee appreciates the opportunity to review and comment on the Cultural Resources Assessment Study, NUVUGANTU, and feel that it is a well documented, indepth study of Southern Paiute History. With the personal involvement of Mr. Dan Bulletts leading the way as Kaibab's Consultant and Research Associate, this study includes his contribution of a great deal of factual information, of which it would otherwise lack, and become just another study based on alot of assumptions.

It pleases us a great deal that our Nevada Tribesmen have stated their concerns to the Study Team.

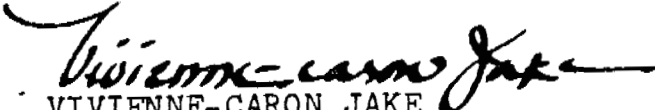
Our duty as Paiute people, then, is to support their concerns, and as there is no stopping the IPP, our participation is expected and desired as is mandated by The American Indian Religions Freedom Act and the National Environmental Policy Act. The Nevada groups have brought the following requests to the attention of the Study Team. Some of these may be negotiable and/or at least be presented as mitigating measures:

- a) That IPP move or shift the transmission lines in accordance to the Paiutes request;
- b) That IPP employ Paiute Cultural Resources people at intervals during the construction phase to oversee the archaeological projects.
- c) That IPP and the BLM be in daily contact with Paiute groups through the Cultural Resources representatives and act on decisions relating to tribal artifacts and burials;

- d) That IPP employ Paiute people on the construction crews;
- e) That the IPP line stay away from springs, watering holes, and lakes;
- f) That IPP and BLM, together, support the Paiute request for setting aside a Cultural Enhancement Site(s) and that these site(s) be closed to commercial users.
- g) That IPP assist and support the Paiutes in their request for reduction of energy costs.

Accompanying this is a draft Resolution for your consideration and action. This Resolution, along with a cover letter must be sent to the Study Team as soon as possible.

The Utah portion of the Study is expected to be out June 18th. We will need to comment on that study as well and the same type of action will apply in that matter, as well.

  
VIVIENNE-CARON JAKE  
Planning Committee  
Chairman

jal



# THE PAIUTE INDIAN TRIBE OF UTAH

600 North 100 East Cedar City, Utah 84720 (801) 586-1111

June 23, 1982

Dr. Richard Stoffle  
IPP Study  
University of Wisconsin-Parkside  
Kenosha, WI 53141

Dear Dr. Stoffle:

We have studied the NEVAGANTU, Nevada Indians Comment on the Inter-mountain Power Project, Adelanto Bipole I Proposal and have passed Tribal Resolution Number 82-21 which is enclosed. This resolution contains our suggestions for mitigation of the adverse impacts to the Nevada part of the study.

If you have any questions please call.

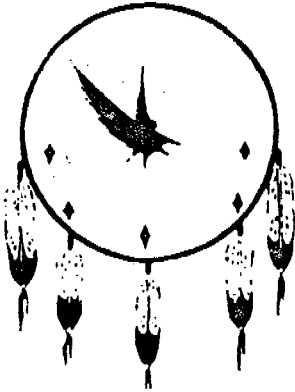
Sincerely,

*Marguerite Lane BX 41*

Marguerite Lane  
Vice-Chairperson

ML/RJ:mb





# THE PAIUTE INDIAN TRIBE OF UTAH

600 North 100 East Cedar City, Utah 84720 (801) 586-1111

RESOLUTION NO. 82 - 21

Subject: Intermountain Power Project

Whereas: Public Law 96-227 entitled the "Paiute Indian Tribe of Utah Restoration Act" was signed into law by President Jimmy Carter on April 3, 1980, and;

Whereas: The Tribal Council is recognized by the Secretary of the Interior as being the duly elected official governing body of the Tribe and;

Whereas: The NEVAGANTU, is a study that deals with Native American Cultural resources within the Nevada Section of the corridor for the northern line in the Southern California System--the Intermountain-Adelanto Bipole I line; and

Whereas: The present study identifies certain Southern Paiute people across whose aboriginal territory the proposed IPP corridor for the IPP Intermountain-Adelanto Bipole I transmission line would be constructed; and

Whereas: Tribal members of Southern Paiutes in the State of Utah have expressed their concerns regarding the value they place upon cultural resources they feel will be adversely affected by this development of high voltage transmission lines; and

Now therefore be it resolved: That the Tribal Council of the Paiute Indian Tribe of Utah does hereby recommend the following for mitigation of the adverse impacts of the IPP in Nevada on the Southern Paiute Nation:

- A) That any burial grounds/sites, traditional sacred areas, ancestral artifacts (such as local clays and plants), battle grounds, campsites and homesites be left untouched and the transmission lines moved or shifted.
- B) That IPP employ a Paiute Cultural Resource Adviser during the construction to oversee the archaeological projects.
- C) That the IPP and BLM remain in contact with all Paiute groups before taking any action relating to American Indian artifacts.
- D) That IPP employ Paiute Indians during the construction.

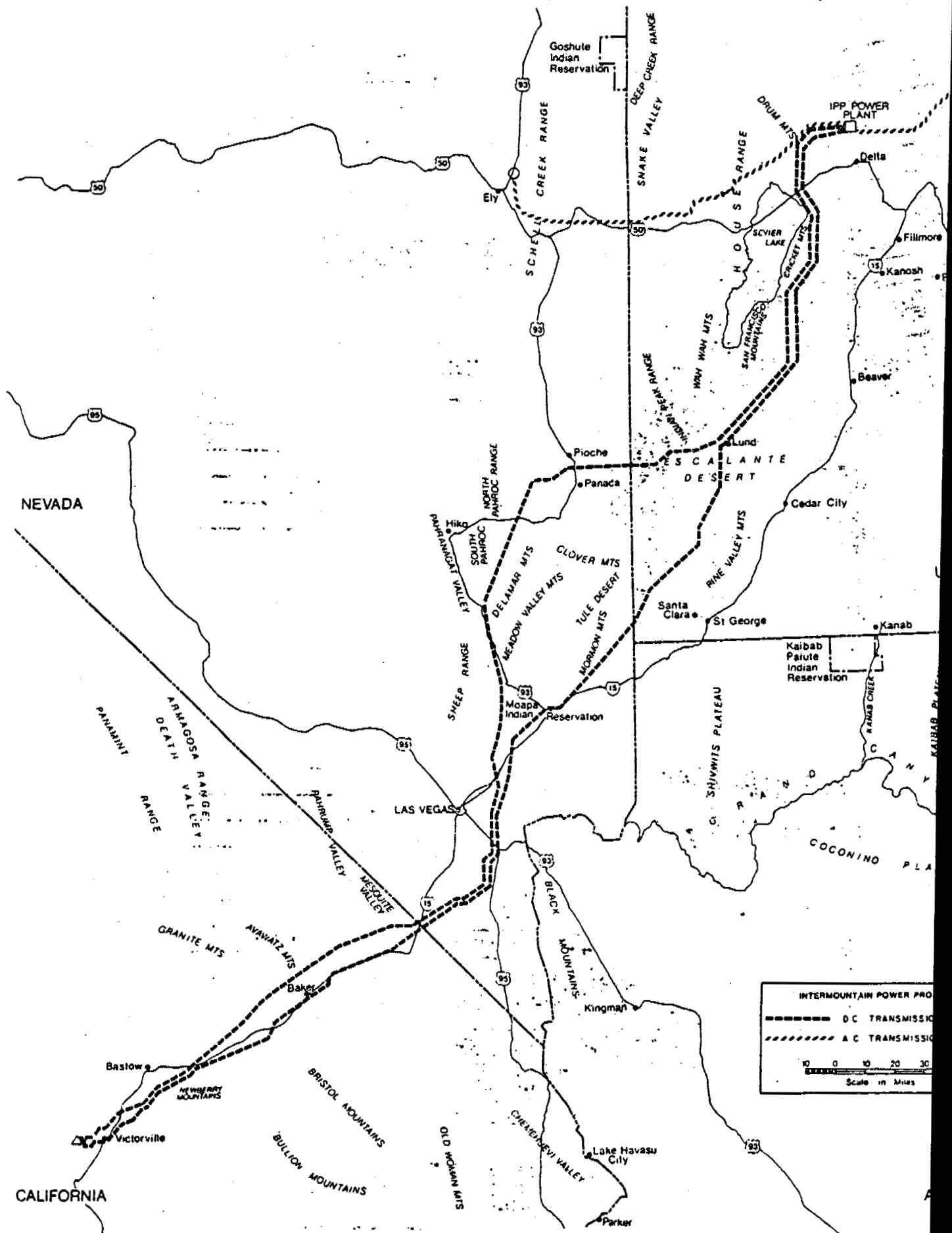
## C E R T I F I C A T I O N

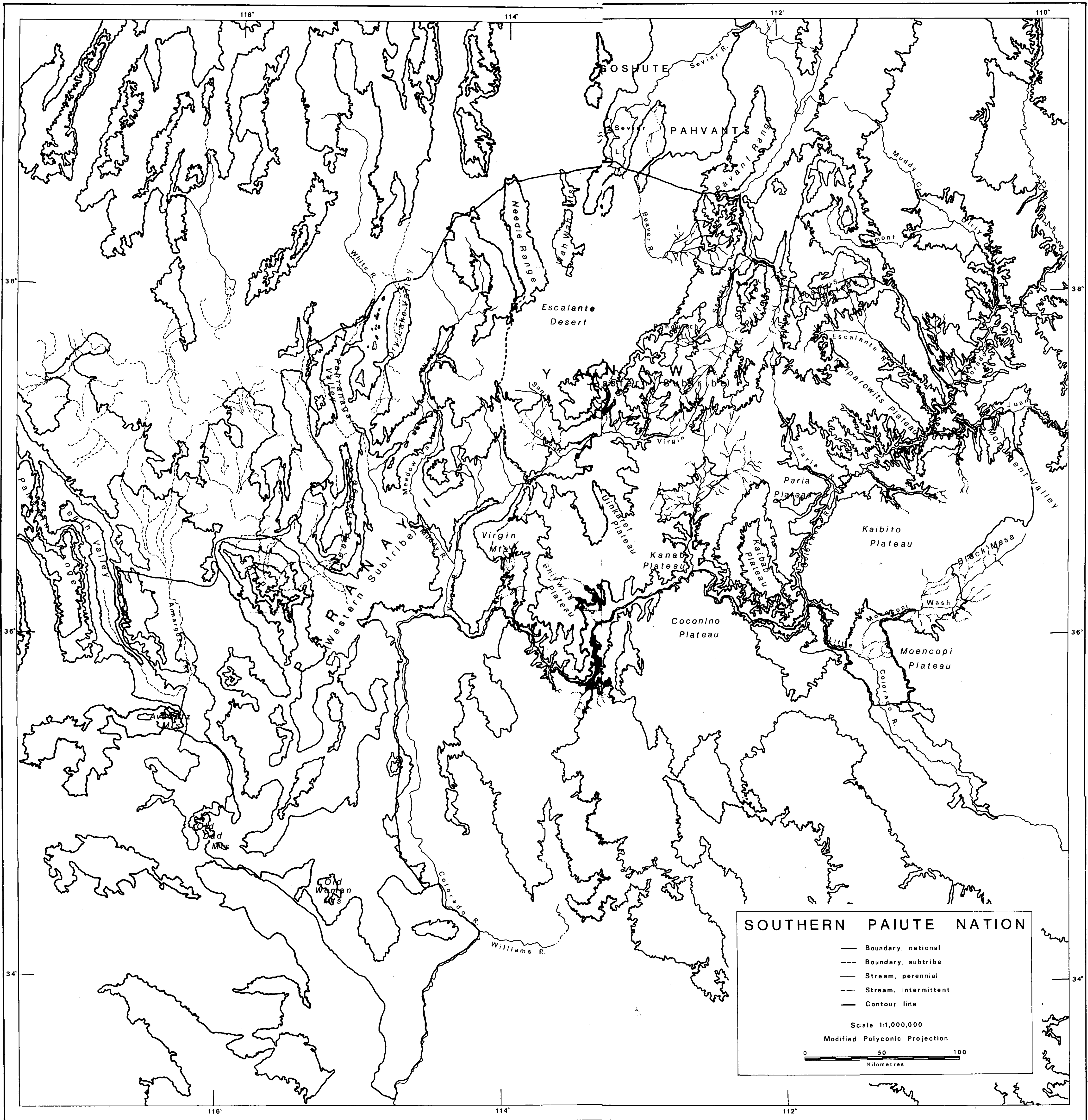
I hereby certify that the foregoing resolution was fully considered by the Tribal Council at a duly held meeting at Cedar City, Utah at which a quorum was present

and that same was passed by a vote of 3 in favor, 0 opposed, and 0  
abstained, this 14 day of June 1982.

MARGUERITE LANE  
Marguerite Lane  
Vice-Chairperson

Geneal Anderson  
Geneal Anderson, Secretary





**SOUTHERN PAIUTE NATION**

- Boundary, national
- - - Boundary, subtribe
- Stream, perennial
- - - Stream, intermittent
- Contour line

Scale 1:1,000,000  
Modified Polyconic Projection

0 50 100  
Kilometres